# COTTON

NOV. SERVING THE 1942

## Textile Industries


COPYRIGHT DEPOSIT

The Home of

**1942**

*Provident's 55th Anniversary*

IT has been a privilege to serve the protection needs of Employees of a steadily expanding Southern textile industry.

Again the Provident has been accorded the position of leadership in the eight states shown in the total volume of Accident and Health protection written in each of these states.

The Library of Congress
Central Serial Record
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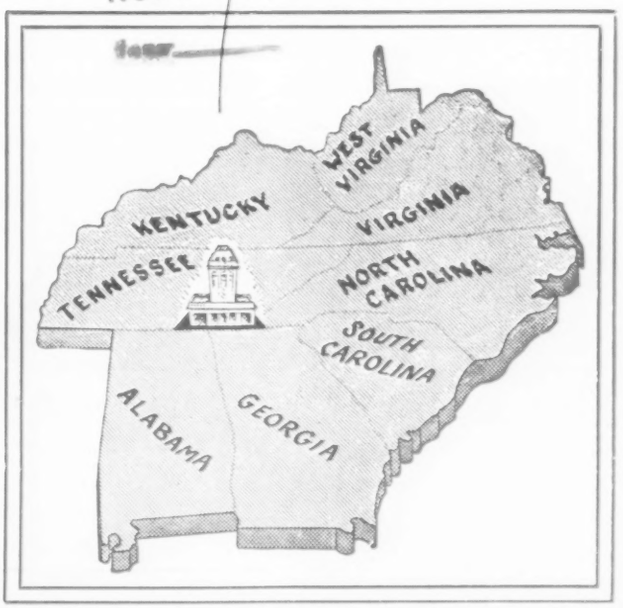
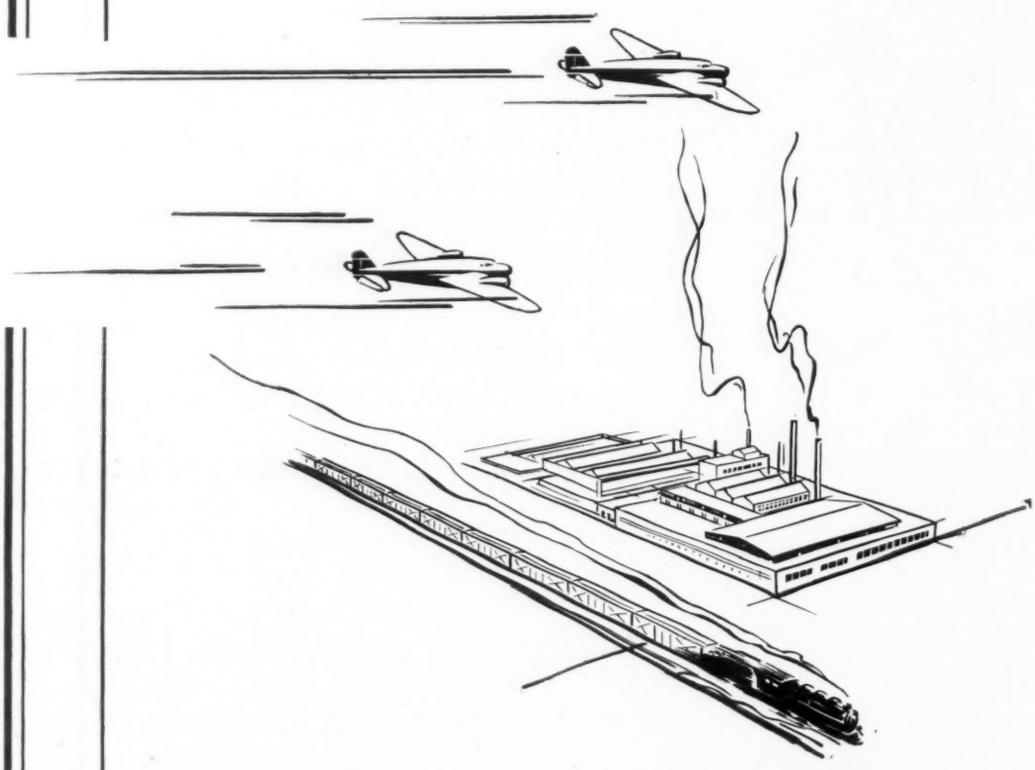
NOV 24 1942

DO your Employees enjoy *complete protection* against the unforeseen emergencies that are sure to strike?—Accidents, sickness, hospital trips, death in Employee's family, death of the worker, need of maternity funds . . . these call for a Provident HUMAN SECURITY Plan which provides money when it is needed most. More than 1,200 plants now have this plan. Your inquiry involves no obligation.




**PROVIDENT**
**LIFE AND ACCIDENT INSURANCE COMPANY**
CHATTANOOGA • Since 1887 • TENNESSEE



## Money, too... Must *WORK FASTER* these Days

American Industry is producing at the fastest rate in its history. To maintain the pace, the working capital of every manufacturer must work faster, too. Waiting for funds tied-up in accounts receivable slows down the activities of many companies, just as surely as waiting for materials.

Today it is possible to extend to customers your regular credit terms of 30, 60 or 90 days and yet receive cash as your goods are shipped. This modern and accepted service keeps your working capital liquid, permits you to turn it more often. At the same time, Commercial Factors relieves you of the costly burdens of credit investigation, collections, credit losses and bookkeeping expense.

Put *your* money on a faster work schedule! Write today for complete information about Commercial Factoring and what it can do for *your* business.

CFC

**COMMERCIAL FACTORS CORPORATION**

| Fred'k Vietor & Achelis, Inc. | Schefer, Schramm & Vogel | Peierls, Buhler & Co., Inc. |
|---|---|---|
| Established 1828 | Established 1838 | Established 1893 |

TWO PARK AVENUE, NEW YORK

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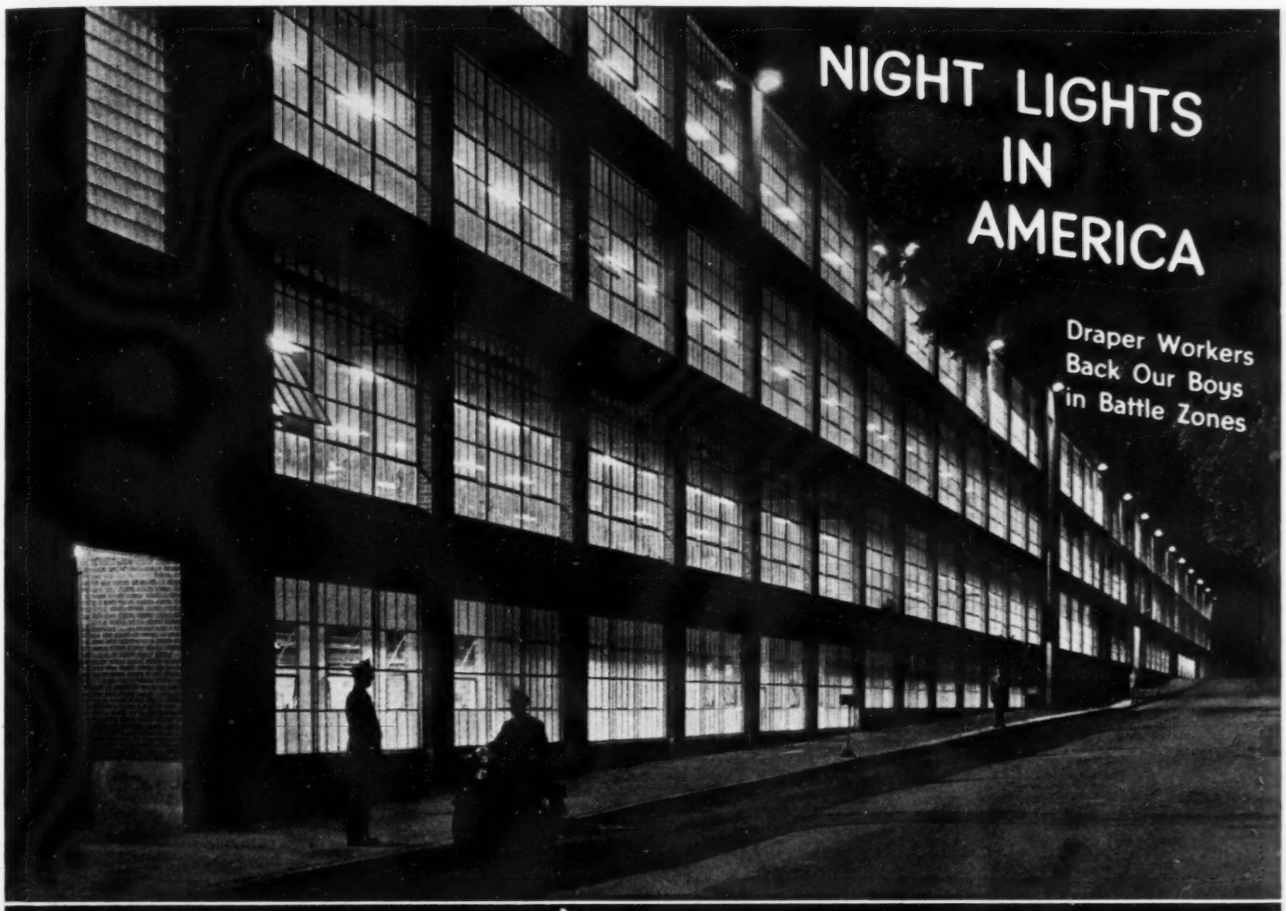
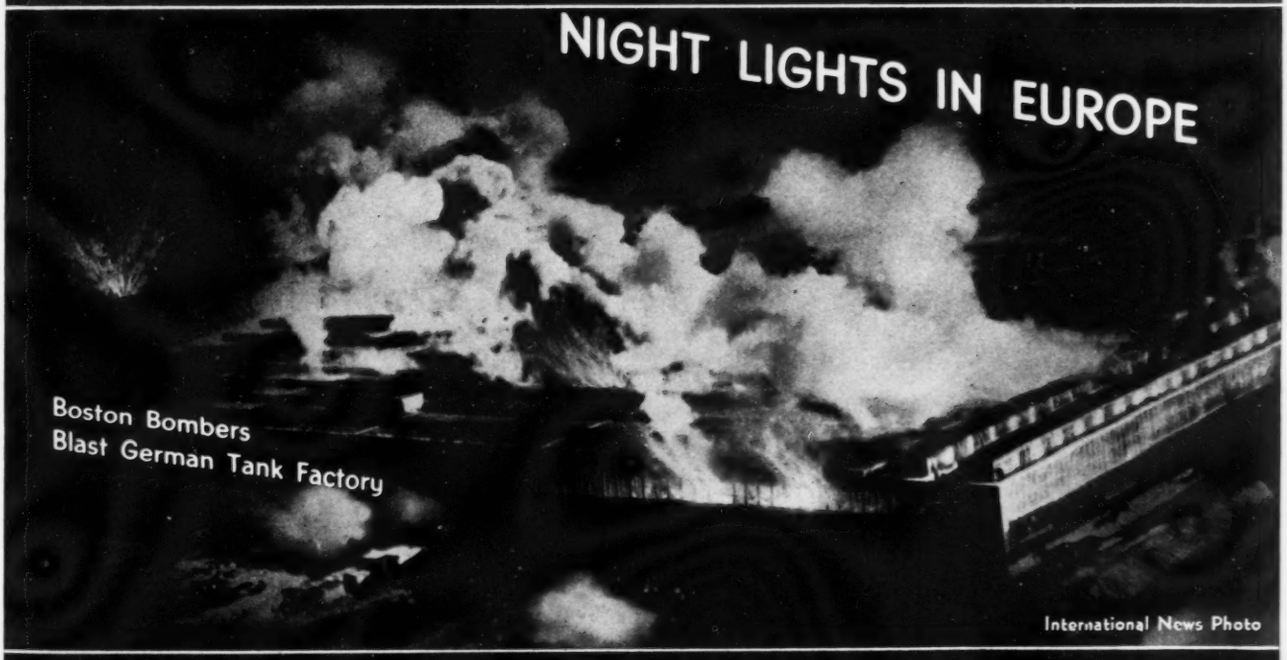
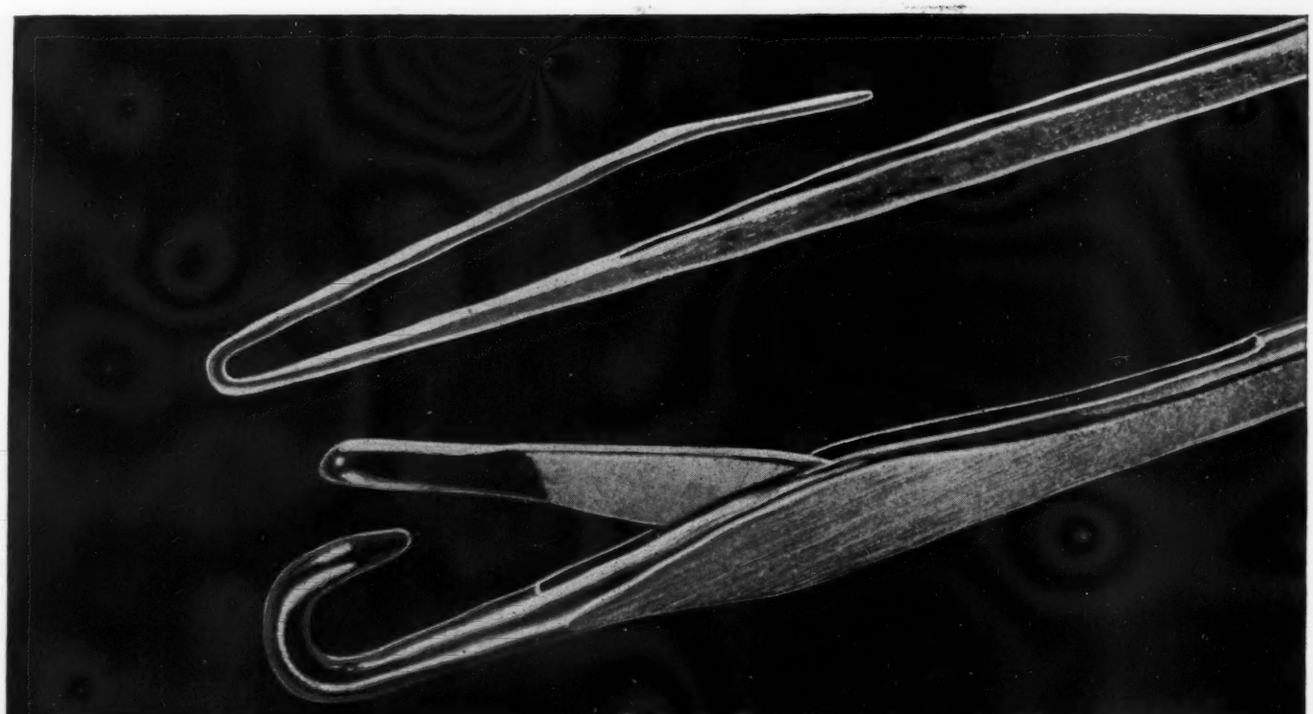



We Are Fighting to Prevent
Reversal of These Pictures

DRAPER CORPORATION



# ORIGINAL SURFACE
## after Hundreds of Dozens

IN MACHINE BEARINGS (both oscillating and rotary) *Texaco Cepheus Oil C* provides effective lubrication and assures freedom from rusting and prevents stock spoilage.

### THEY PREFER TEXACO

★ More locomotives and cars in the U. S. are lubricated with Texaco than with any other brand.

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

EVEN after long service in the presence of moist air and wetted yarn, knitting needles retain original highly polished surfaces and form identical loops course after course—when protected with *Texaco White Needle Oil B.*

*Texaco White Needle Oil B* provides effective lubrication and positive protection against rusting, resists oxidation and gum formation, keeps needles CLEAN and is easily removed in the boil-off.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred by prominent mills in every textile area.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distributing points in the 48 States, or write:

The Texas Company, 135 E. 42nd St., New York, N. Y.

TEXACO REG. T.M.

# TEXACO Lubricants
## FOR THE TEXTILE INDUSTRY

TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

# These are the war-time facts about WESTVACO CAUSTIC SODA

As one of America's important chlorine producers, Westvaco is operating at maximum capacity for the war effort.

Co-product is Westvaco Caustic Soda.

With continued peak production of Westvaco Chlorine, we have every reason to believe that we can provide the full requirements of old and new users of Westvaco Caustic Soda, both as to quantity and quality.

Westvaco CHEMICALS

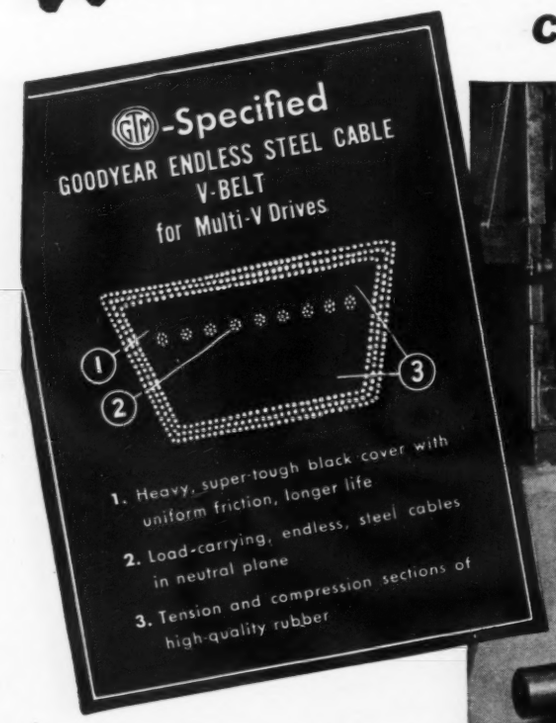
## WESTVACO CHLORINE PRODUCTS CORPORATION

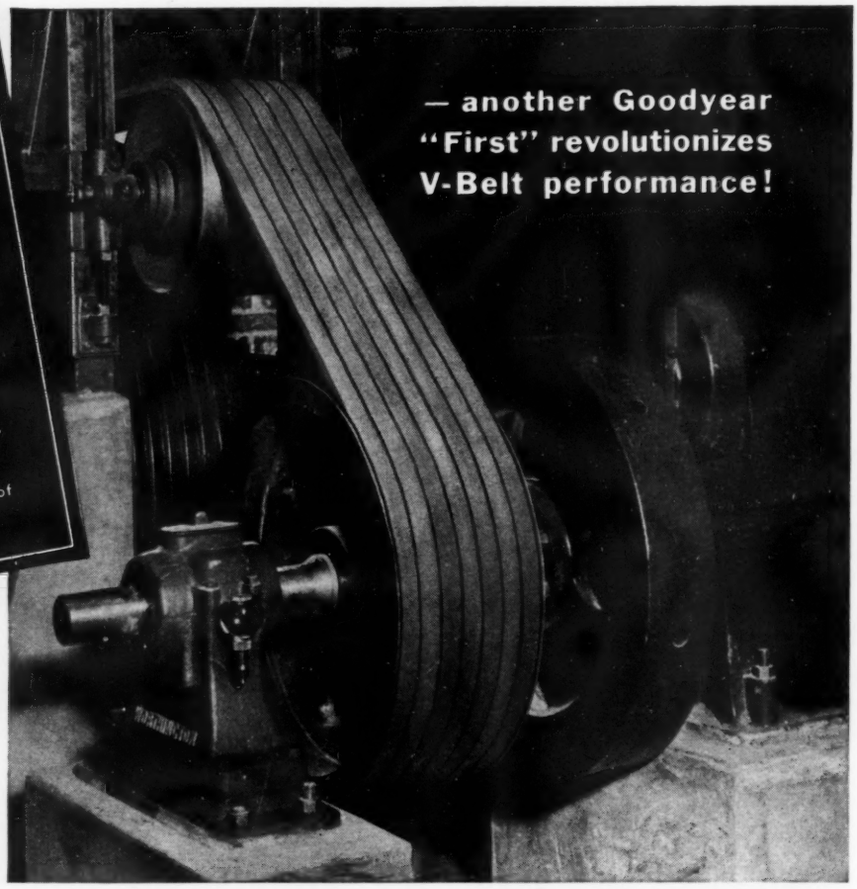
CHRYSLER BUILDING • NEW YORK, N. Y.

Chicago, Ill. Greenville, S. C. Newark, Calif.

# *Here's* THE ULTIMATE V-BELT

## *Constructed with endless steel cables*


G T M -Specified
GOODYEAR ENDLESS STEEL CABLE
V-BELT
for Multi-V Drives
1
2
3
1. Heavy, super-tough black cover with uniform friction, longer life
2. Load-carrying, endless, steel cables in neutral plane
3. Tension and compression sections of high-quality rubber




AFTER many months of research, development and field operation on the hardest drives, work has just been completed on another Goodyear "First"—the V-belt of the future, built with endless steel cables in place of conventional cotton cord construction.

In exhaustive tests this new Goodyear Endless Steel Cable V-Belt has averaged more than SEVEN times longer service-life than the best cotton cord belts — with less than ⅛ of 1% stretch.

The outstanding advantages of the Goodyear Steel Cable V-Belt, the latest addition to the outstanding line of Black E-C Cord Multiple V-Belts, make it possible to engineer Multi-V drives where space limitations and other engineering factors formerly denied their usage.

*Greater Strength Factor: far heavier drives can now be changed over to economical Multi-V operation.*

*Highest Heat Resistance: proved on U. S. Tanks.*

*Minimum Stretch: practically zero stretch with fewer adjustments.*

*Uniform Stretch: every belt takes its proportional share of the load, giving smoother operation.*

*Far Longer Life: lowest over-all cost for heaviest drives.*

So successful is this construction proving, that new high standards are set in all phases of Multi-V drive performance and wartime production is speeded up. Its many advantages and economies are another Goodyear "First"— a triumph of G. T. M. rubber engineering — at present only available for special war jobs and critical drives for war work operation.

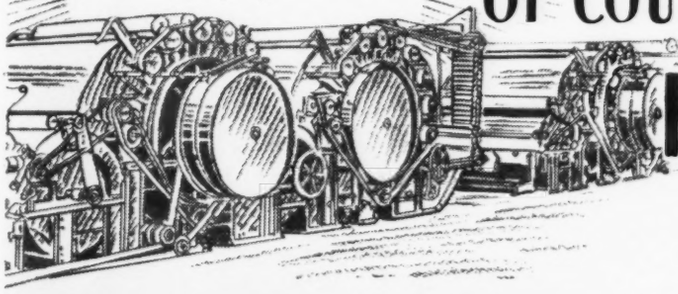
For complete information, consult the G. T. M. — Goodyear Technical Man — or write Goodyear, Akron, Ohio, or contact the nearest Goodyear mechanical goods distributor.

E-C Cord—T M. The Goodyear Tire & Rubber Company

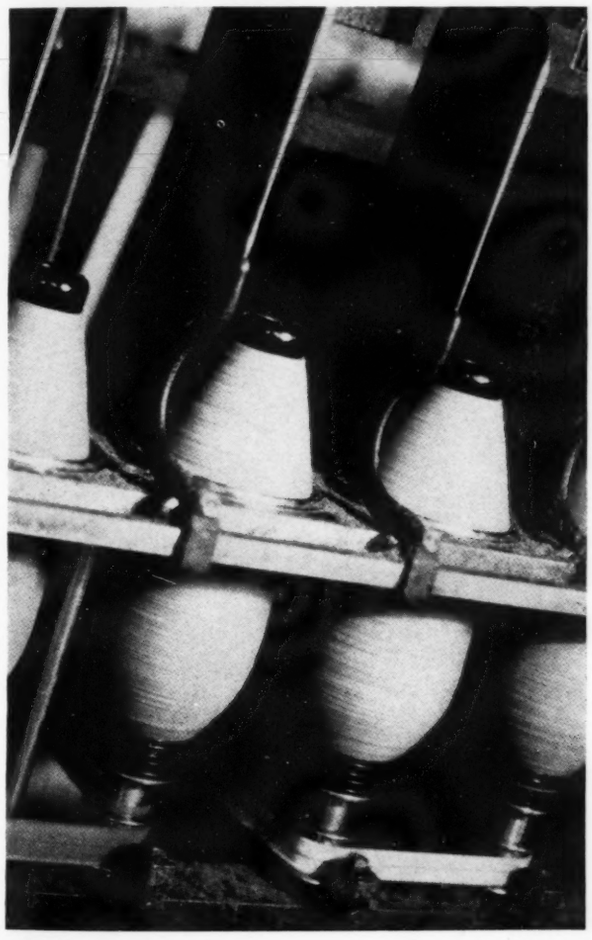
*PROVED ON U. S. TANKS — ordinary fan belts "burn out" in a few hours — Goodyear Steel Cable V-Belts last months!*

# Better Textile Machines After the War?

## OF COURSE, but for the Present—



## KEEP THOSE SPINDLES TURNING!



The tremendous impetus given to industry by an impelling necessity for production for war will be reflected in the post-war period in vastly improved processes and materials. The textile industry will unquestionably be bigger, better and stronger for the lessons learned during the war.

We in the textile machine business, too, are learning many new things which will help us to make better designed, better engineered and better built textile machinery.

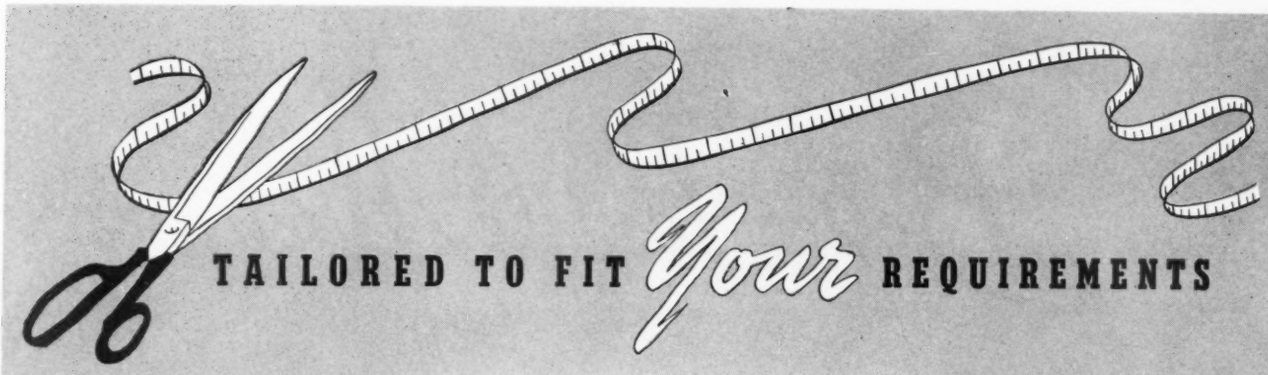
During the emergency it is probably going to be very difficult for many mills to obtain new machinery because most of the energy and plant of machine builders are converted to the war effort.

For the present, therefore, we urge that existing plant be kept in condition to insure full operation at maximum production by regular check-ups for machine alignment and adjustment. Substitute new parts where they are needed, and before actual breakdowns occur. When this is done insist upon replacements made by the builder of your machines . . . the one most vitally interested that you shall get the utmost from his product.

**WHITIN MACHINE WORKS**

WHITINSVILLE, MASS., U. S. A.

CHARLOTTE, N. C. ATLANTA, GA.



# TAILORED TO FIT *Your* REQUIREMENTS

UNIFORM FABRICS

Ahcopel Water Repellent Emulsions are tailored to fit your particular requirements. If none of our present formulas meet your needs, we will develop new ones. Some of our emulsions are MILDEW RESISTANT to meet Government specifications.

Ahcopel makes fabrics water repellent and stain and spot resistant, but does NOT destroy their porosity. It is easily applied in a single bath in quetch, padder, jig or beck.

Ahcopel was satisfying John Q. Public long before it passed the rigid inspection of Uncle Sam. When you use it, you get the benefit of our "pioneer" experience.

**SAMPLES ON REQUEST**

★

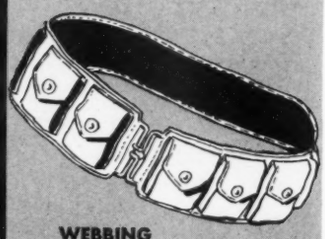
**ARNOLD, HOFFMAN & CO., INC.**

Established 1815 • Plant at Dighton, Mass.

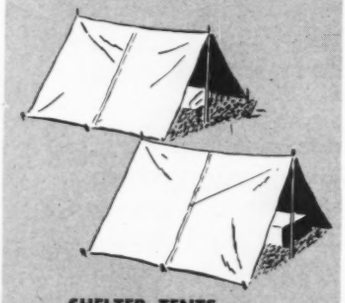
**PROVIDENCE, RHODE ISLAND**

New York • Boston • Philadelphia • Charlotte

SLEEPING BAGS



WEBBING



SHELTER TENTS

PARACHUTE CORDS

CAMOUFLAGE FABRICS

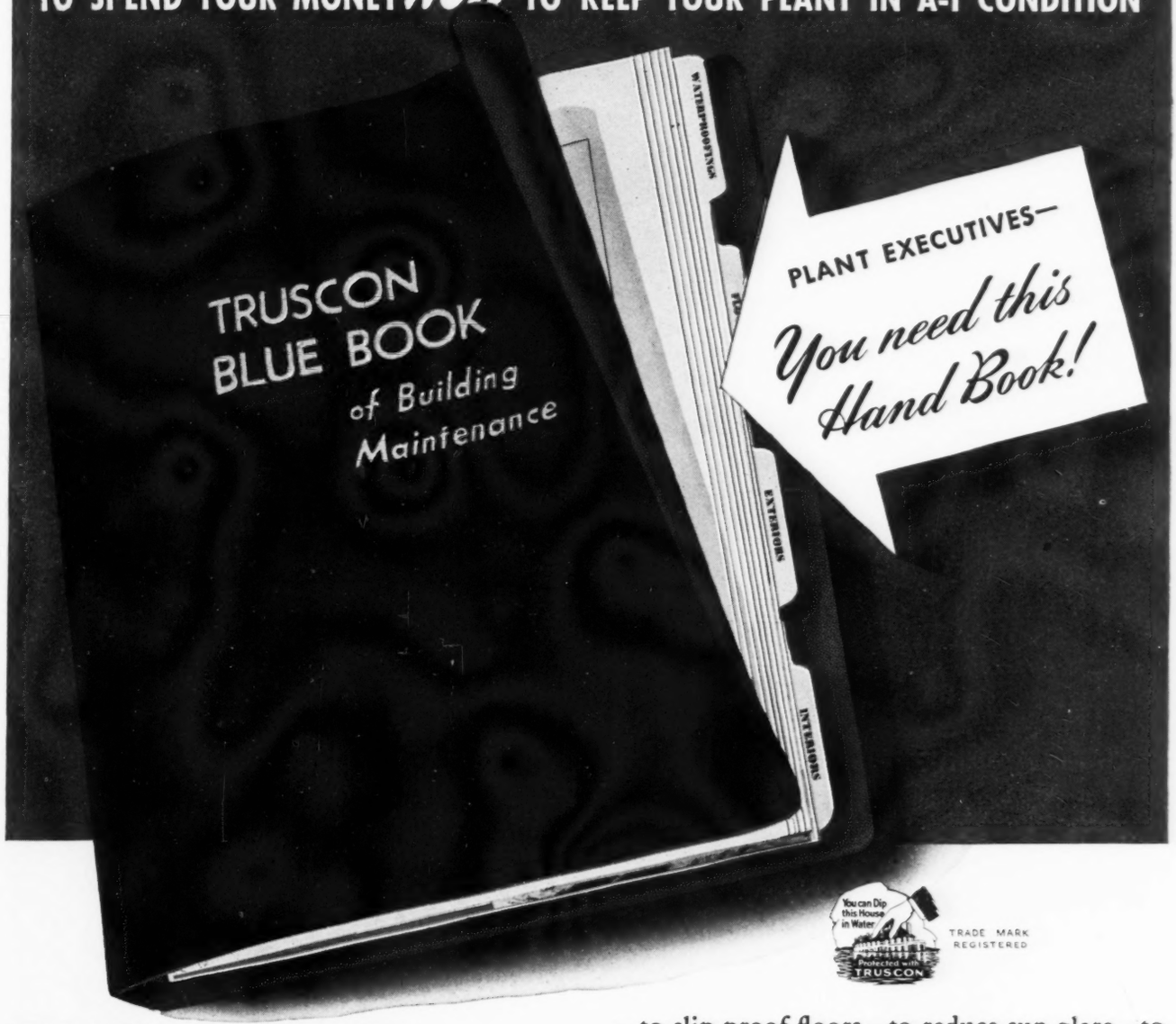
# Ahcopel

**WATER REPELLENT EMULSIONS FOR MILITARY AND CIVILIAN FABRICS**

TIMELY SUGGESTIONS FOR FAR-SIGHTED EXECUTIVES . . .

# It's Wise Spending

TO SPEND YOUR MONEY *NOW* TO KEEP YOUR PLANT IN A-1 CONDITION




## IT'S WISE SPENDING

**—to treat your CEMENT FLOORS to stop them from crumbling and dusting away.**

**—to protect your STEEL from rust destruction.**

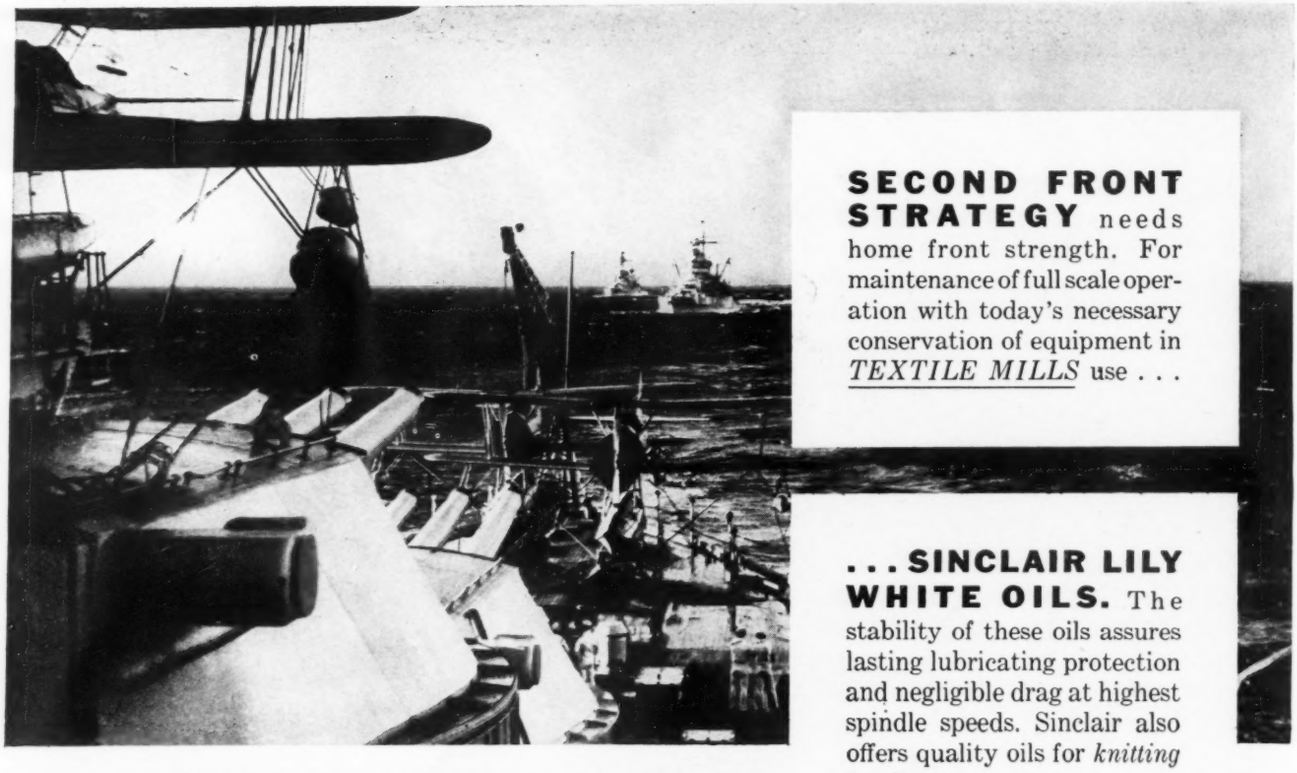
**—to paint your PLANT INTERIORS white to conserve electricity and improve morale.**

**—to paint and preserve your BUILDING EXTERIORS.**

It's wise spending to conserve all structural materials. The TRUSCON BLUE BOOK tells you how to do this in the most efficient way. And it tells you much more besides—how to acid-proof steel work—to protect and restore wood floors—to slip-proof floors—to reduce sun glare—to waterproof new construction—to cure concrete more efficiently—and how to get the best economical solutions to many more maintenance problems. It explains much you should know about protecting critical structural materials.

**FREE** to plant maintenance executives. Request must be written on business stationery to Department C-26

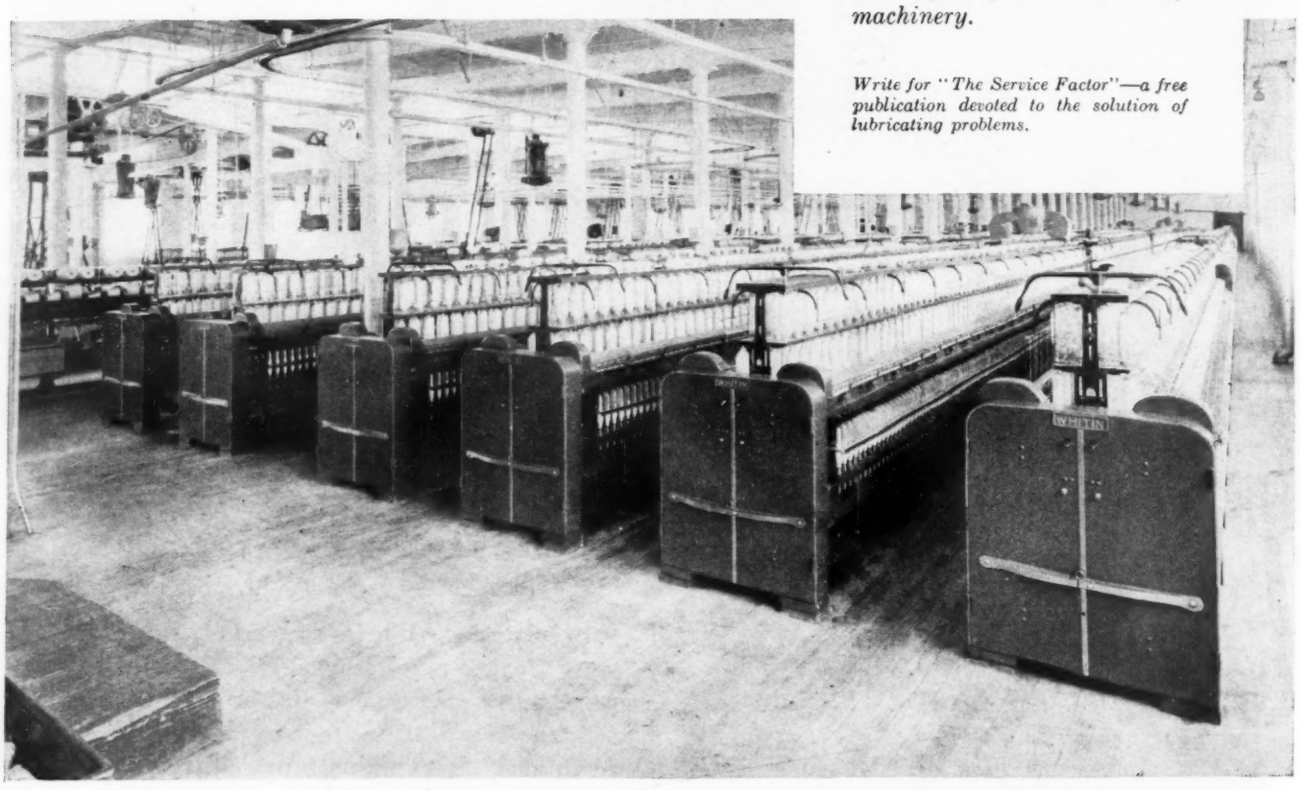
**TRUSCON LABORATORIES** DETROIT MICHIGAN



**SECOND FRONT STRATEGY** needs home front strength. For maintenance of full scale operation with today's necessary conservation of equipment in *TEXTILE MILLS* use . . .

**. . . SINCLAIR LILY WHITE OILS.** The stability of these oils assures lasting lubricating protection and negligible drag at highest spindle speeds. Sinclair also offers quality oils for *knitting machinery.*

*Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.*



# SINCLAIR TEXTILE LUBRICANTS

***FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE***

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago · 10 West 51st Street, New York City · Rialto Bldg, Kansas City · 573 West Peachtree Street, Atlanta · Fair Building, Ft. Worth

# For *Priorities* on tomorrow's Improvements

## Plans to Saco-Lowell-ize* should be started Today

**Saco-Lowell Shops**

**60 Batterymarch Street, Boston, Mass.**

*Charlotte, N. C. Greenville, S. C. Atlanta, Ga.*

**Until "V" day** the building of new cotton-preparing and spinning machinery will continue to be subject to government control. But, although new machinery is not readily available now, there are many ways in which Saco-Lowell engineers and technicians can be helpful to you at this time.

**For example** — Saco-Lowell engineers, after inspecting your equipment, may be able to recommend settings and changes which will better the performance of your machinery. Also in cooperation with your own operating staff, Saco-Lowell engineers will prepare a fact-finding study of your requirements for a *Saco-Lowell-izing** program to be started when possible.

**There is no doubt** that the period immediately after "V" day will require drastic adjustments . . . and the completion of an improvement program now may give you "priority" at a time when there will be a great demand for new equipment.

**Mills interested** in Saco-Lowell-izing* their plant to meet conditions in the postwar era are urged to begin their planning at once. Do not wait for "V" day.

*

*To utilize floor space so as to achieve the ideal in continuity of production; to coordinate all successive steps in processing; to reduce waste, spoilage and useless transportation of stock; and to attain the greatest economy in maintenance and operating costs.*

## TOUGH, BUT NOT ROUGH

*Emmons Heddles Reduce Weaving Variables*

Writing "Emmons" in front of your order for steel heddles is a simple way to reduce warp breaks and cut replacement costs.

Emmons "Certified" Steel Heddles are watched carefully throughout manufacture to insure the qualities that mean gentle handling of the yarn and greatest resistance to wear — smoothness of eye, high tensile strength, corrosion resistance.

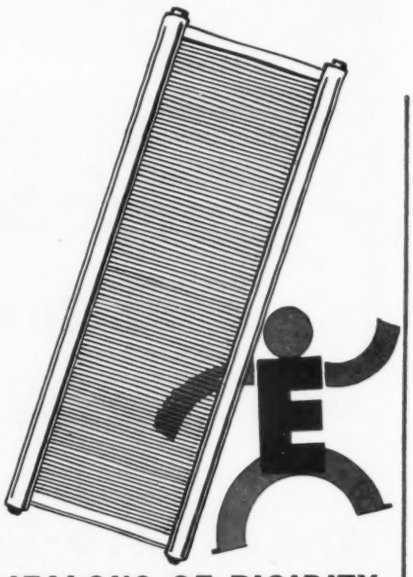
In addition to final tests to earn our "Inspected and Approved" seal, sample heddles are periodically examined by a famous testing laboratory.

Result: a heddle that is tough when it comes to wear, but never rough to yarn. You can expect greater freedom from roughed-up yarn, less "fly," longer periods between replacements.

*Be Certain . . . Buy Certified*

**EMMONS LOOM HARNESS COMPANY**
Lawrence, Massachusetts . . . . Charlotte, North Carolina

## GENEROUS TO YARN



## JEALOUS OF RIGIDITY

You get all the air space your yarn needs in an Emmons Reed — up to 70% if you want it. Yet there's no loss of strength or rigidity, because as the reed wires decrease in *thickness*, they are *increased* in *width*.

This air space is accurately measured to .01", so you won't get reedy cloth. And dent thickness is controlled within .001" — you get uniform, super-smoothness that can't help but result in better-quality work.

All Emmons products are shipped only when the tests of an Emmons Inspector have proved them deserving of this seal.

**EMMONS**

## WORKS FAST

## WITHOUT JITTERS

If you've ever had a heddle frame buckle or bind at high speeds, you'll appreciate the strong construction of Emmons Heddle Frames. Rolled rivets provide extra strength where it is really needed. We use more than the usual number of rivets, too.

**EMMONS**

Lawrence, Mass. and Charlotte, N. C. All products stocked in Charlotte and Lawrence, Reeds manufactured in Charlotte. Branch offices: Clifton Watson, Manager of Southern Sales, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2643) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 171 Madison Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

*Argentina*, Buenos Aires, Roberto Zander, 345 Juan Jaures; *Brazil*, Rio de Janeiro, A. Polak, Caixa Postal 362; *Chile*, W. L. Robinson, Casilla 1570, Valparaiso; *Cuba*, Havana, J. M. Perez-Pena, Box 1611; *Mexico*, Mexico, D. F., Leo Lenk, Apartado 533; *Colombia*, Medellin, C. E. Halaby & Co., P. O. Box 139.

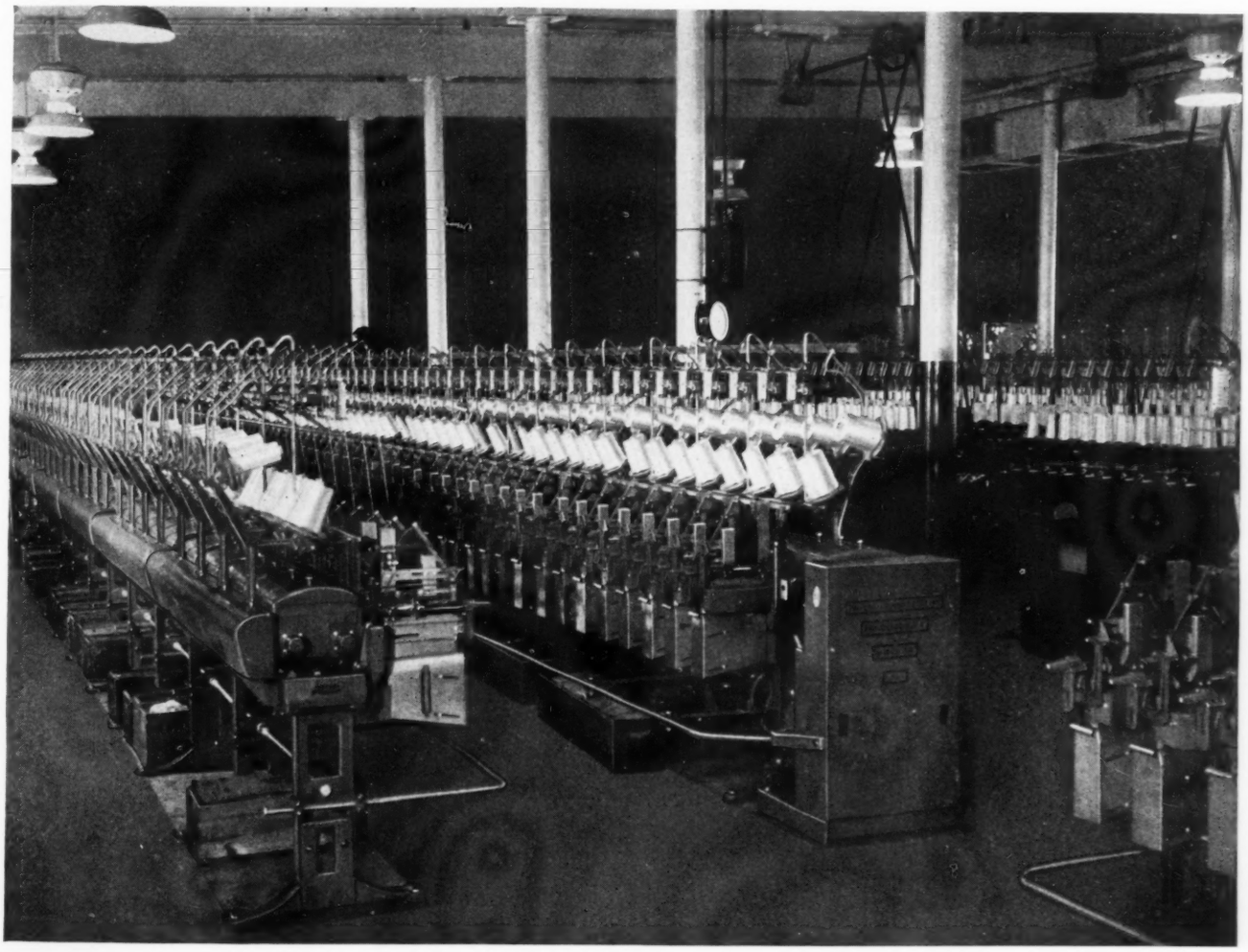
# Loom Bobbins at 5000 R.P.M. on the UNIVERSAL AUTOMATIC

***Greater production per spindle results from three major features of the UNIVERSAL AUTOMATIC (No. 99 Bobbin Winder):***

***High spindle speed.*** A new type of traverse cam and gear drive produce a uniform spindle speed of approximately 5000 R.P.M. The tensions are held open, automatically, at the start of the bobbin to prevent straining the yarn at this high speed.

***Automatic doffing.*** The full bobbin is automatically doffed and the thread guide returned to starting position, an empty bobbin is brought into position, the spindle is started, the bunch is built, and the full package is wound . . . all without attention from the operator.

***Continuous yarn supply.*** The magazine creel provides an uninterrupted supply of yarn from large packages without stops for tying in new ends, thus permitting the automatic doffing mechanism to be operated continuously.



*See our Catalog in TEXTILE YEARBOOK*

# UNIVERSAL AUTOMATIC

*HIGH SPEED BOBBIN WINDER*

# UNIVERSAL WINDING COMPANY

PROVIDENCE · Boston · Philadelphia · Utica · Charlotte · Atlanta

**RODA** — High grade gas, by-product and steam coal from Wise County, Va., on the Interstate Railroad.

**DENDRON** — High grade gas, by-product, steam and domestic coal from Wise County, Va., on the Interstate Railroad.

**STONEGA** — High grade, high volatile steam and by-product coal from Wise County, Va., on the Interstate Railroad.

**PREMIX STOKER** — A laboratory controlled product blended to meet exacting stoker requirements. From Wise County, Va., on the Interstate Railroad.

**COKE** — Roda and Stonega from Wise County, Va., and Connellsville Coke from Pennsylvania.

**CRITERION COAL** — High grade gas, by-product, steam and domestic coal—Pittsburgh seam from Irwin Basin, Westmoreland County, Pennsylvania, on the Penna. Railroad.

**CROZER** — Genuine Third Vein Pocahontas from McDowell County, W. Va., on the Norfolk & Western Railroad.

**Admiralty Coal** — **Genuine New River Smokeless, Beckley or Sewell seam from Raleigh County, W. Va., C. & O. and Virginian Railroads.**

**Old Kentucky** — Hazard No. 4 and No. 7 steam and domestic coal from Wiscoal, Knott County, Kentucky, on the L. & N. Railroad.

**GENCO** — Steam and domestic coals from a number of producing districts.

**ANTHRACITE** — Premium and standard qualities in the entire range of Anthracite burning characteristics.

Capable engineering personnel and the experience gained through long and varied marketing activity assures proper application of one of the above brands and effective servicing of any fuel requirement.

# General Coal Company

**123 SOUTH BROAD STREET . . . . . PHILADELPHIA, PA.**

*Branches*

**BLUEFIELD, W. VA.**
**BOSTON**
**BUFFALO**
**CHARLESTON**
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**NEW YORK**
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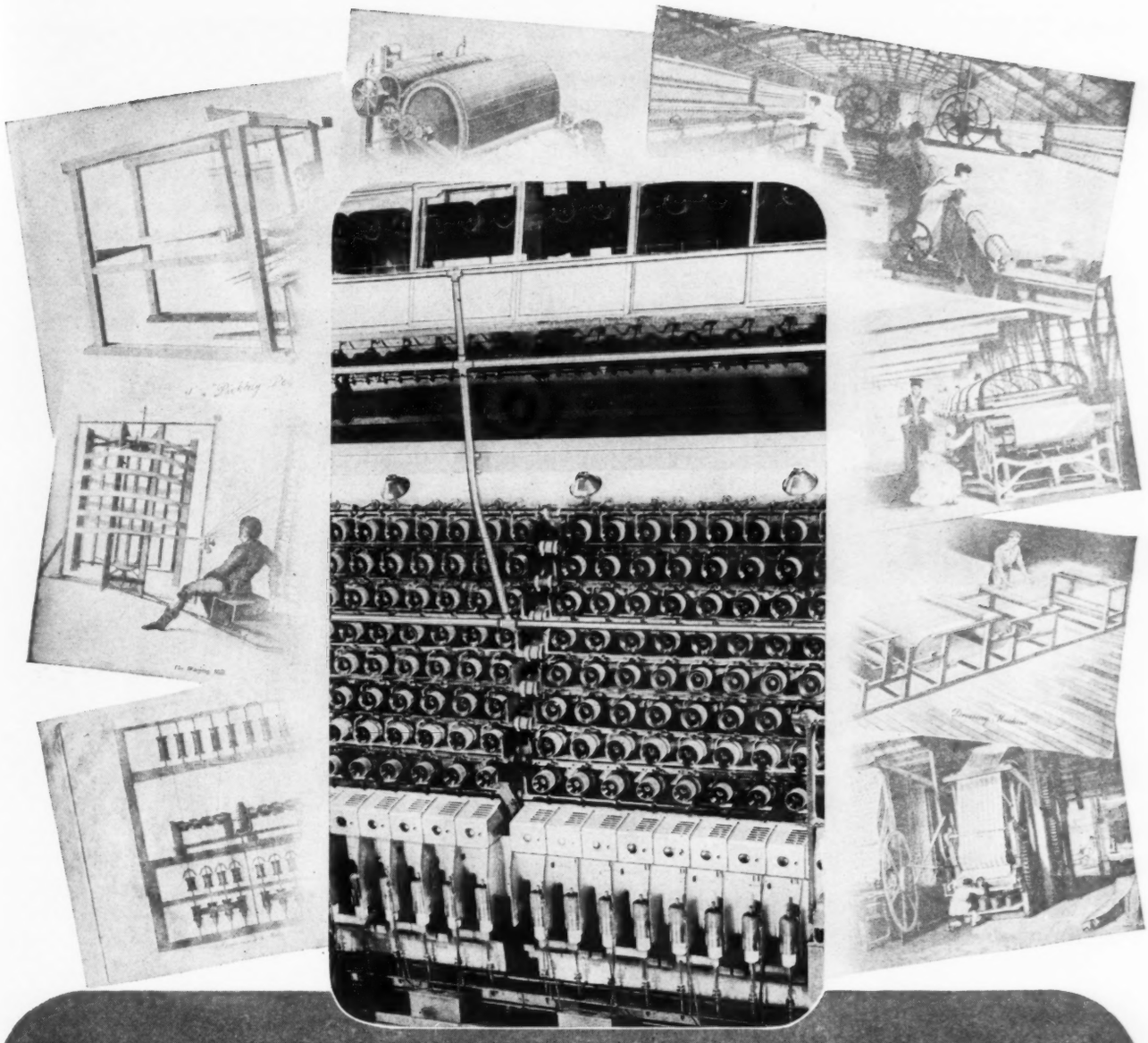
**PITTSBURGH**



# Continuous Process Makes Textile Progress

TEXTILES are as old as civilization, but the methods used to produce them remained unchanged for centuries.

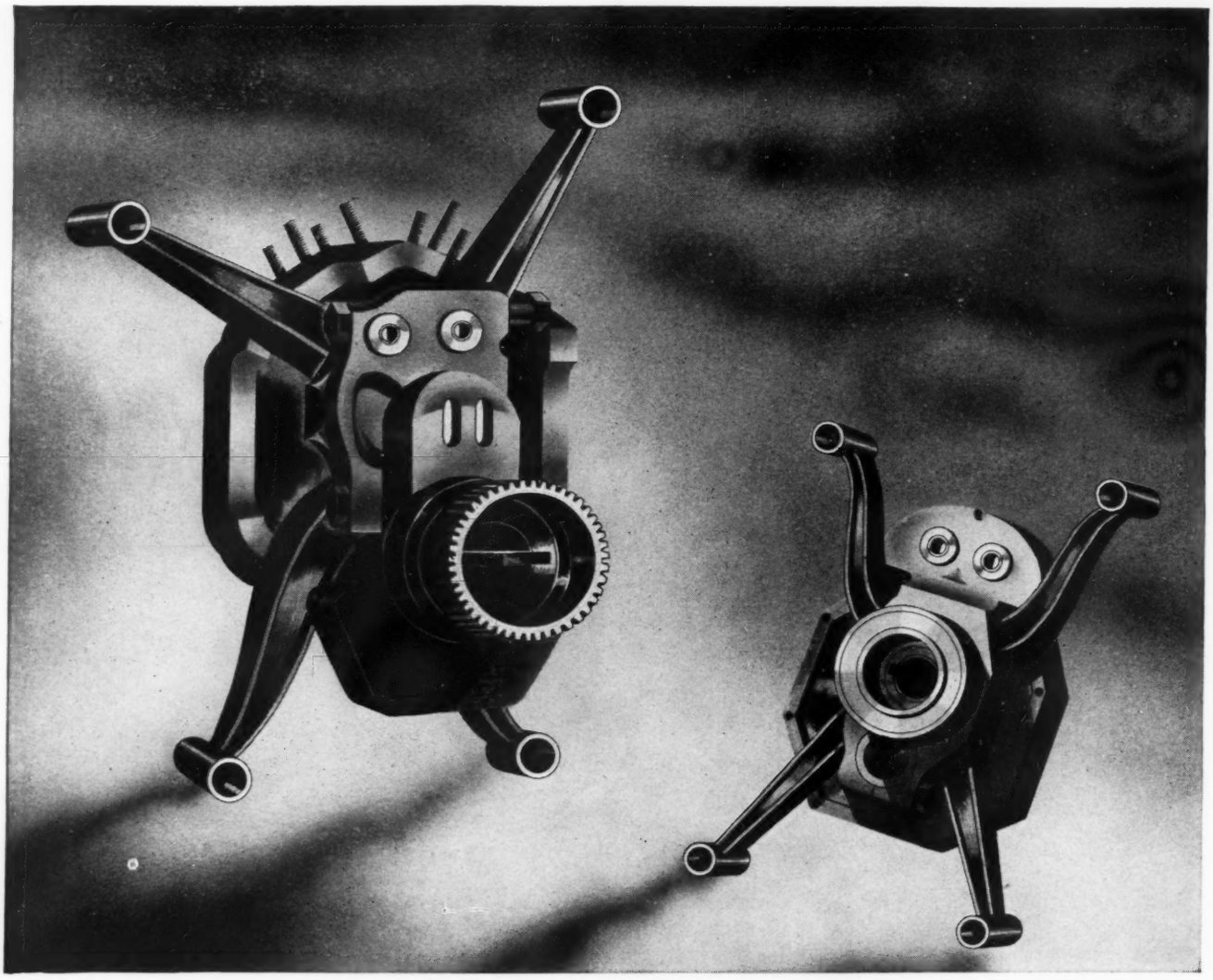
Textile progress dates from the introduction of the first continuous process. It accelerated production, improved quality and increased uniformity to such a degree that every step in manufacturing had to adopt a continuous process to keep pace. These processes changed the manufacture of textiles from a home craft to a giant industry.

To rayon, the mighty infant among textile fibres, fell the privilege to develop the most revolutionary continuous process of all. It is a process which spins, washes, bleaches, treats, dries and twists viscose process rayon yarn in one continuous operation.

The SPUN-LO RAYON yarn it produces is more uniform in strength, lustre and denier and is virtually free from knots and broken filaments. The cloth made from this yarn is of higher quality and more uniform. It increases mill efficiency because loom-stoppage and seconds are reduced.

"CONTINUOUS PROCESS" Spun-lo Rayon
Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION • Cleveland, Ohio—New York Office, 500 Fifth Avenue



# why TUESDAY couldn't marry THURSDAY

It happened in an airplane factory.

When brought together on the assembly line, some close-tolerance motor parts did not fit. Yet each part had been made correctly.

One part had been made on Tuesday—accurately. The other part had been made on Thursday—also accurately.

But Thursday was a warmer day than Tuesday. Uncontrolled expansion, due to the difference in temperature, upset the microscopically close tolerances of the two parts . . . thus preventing an accurate fit.

To eliminate the resulting waste and delay . . . air conditioning was installed to keep temperatures *under control.* It had to be extremely efficient air conditioning—with more *exact* temperature and humidity. *Precision* air conditioning—the kind General Electric is installing in many war production plants.

Today, air conditioning is making enormous, revolutionary advances in meeting stringent wartime requirements. After the war, the lessons learned in making fighting equipment will be applied to bring many new and interesting benefits to the general public.

More people will enjoy air conditioning . . . in homes . . . in cars . . . and in ever-increasing numbers of stores, offices and factories. It will be vastly improved air conditioning . . . in many ways. Temperature *and humidity* will be maintained more exactly than ever before. Equipment will be compact . . . flexible . . . economical.

Today, hundreds of wartime industrial users are turning to General Electric for reliable equipment. In the future, G-E air conditioning will fill the needs of all kinds of users.

*Air Conditioning and Commercial Refrigeration Department, Division 423, General Electric Co., Bloomfield, N. J.*

*Air Conditioning by*

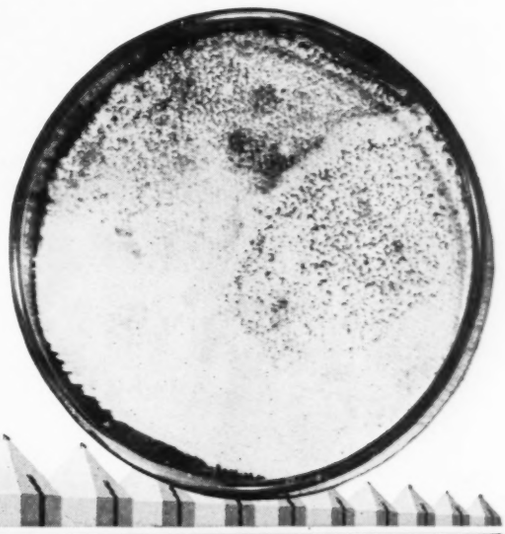
**GENERAL ELECTRIC**

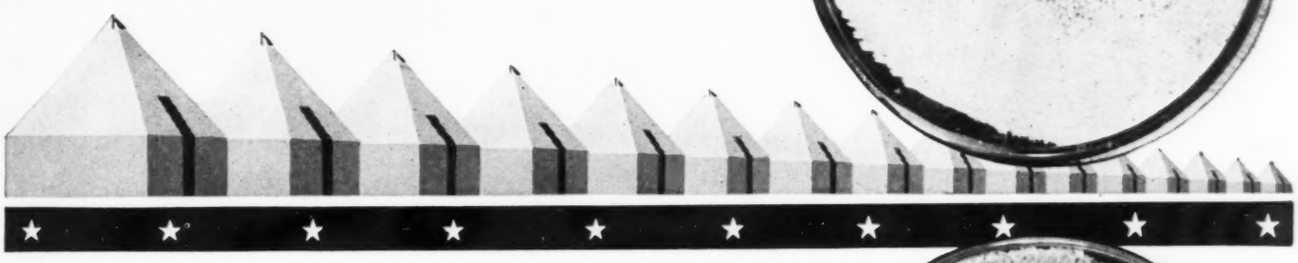
# DOWICIDE

## INDUSTRIAL GERMICIDES AND FUNGICIDES

## L-O-N-G-E-R LIFE FOR ARMY DUCK!

*Mildew growth on untreated duck exposed to normal atmospheric conditions.*



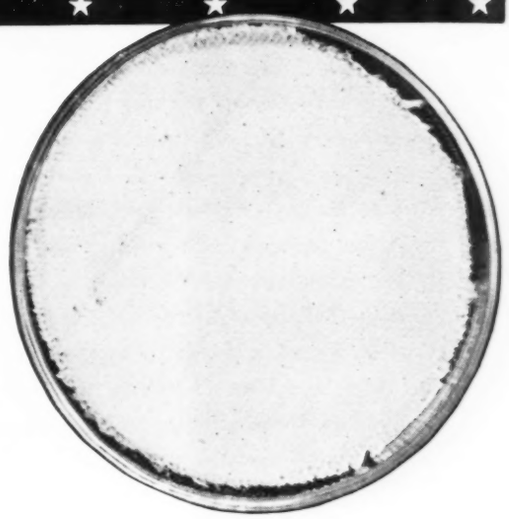


ARMY DUCK is vital to our armed forces. To be able to give longer life under the varied climatic conditions to which fabric will be exposed makes it necessary that mold growth be prevented. DOWICIDE*, a group of chlorinated phenol derivatives, manufactured by The Dow Chemical Company, is providing this vital protection. When DOWICIDE is incorporated in compositions used for finishing, it furnishes effective and long lasting protection against mildew and rot.

The inhibiting action of DOWICIDE is thorough and entirely dependable under all atmospheric conditions—from arctic to tropical. Thus another Dow product proves indispensable to our all-out effort by improving the quality of army duck—giving longer life to the many thousands of army tents, tarpaulins and similar equipment.

For complete information write to the Dowicide Division.

*Trade Mark Reg. U. S. Pat. Off.



*Duck exposed to normal conditions—treated 1% DOWICIDE—no mold growth.*

DOW

**THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN**

New York · St. Louis · Chicago · San Francisco · Los Angeles · Seattle · Houston

# Give your Aluminum

# *the Attention it Deserves*

Aluminum Alloy textile mill installations can be classed in two ways; working parts and protective applications. Machine parts constitute the first group. They move faster and smoother, because they're made of lightweight Aluminum. You get more and higher quality production.

The long lines of Aluminum and glass hoods seen in the above photograph are typical of the protector class. Their job is to keep dust out, and to help maintain constant temperatures and humidities in the machines. The Aluminum resists the corrosive conditions encountered.

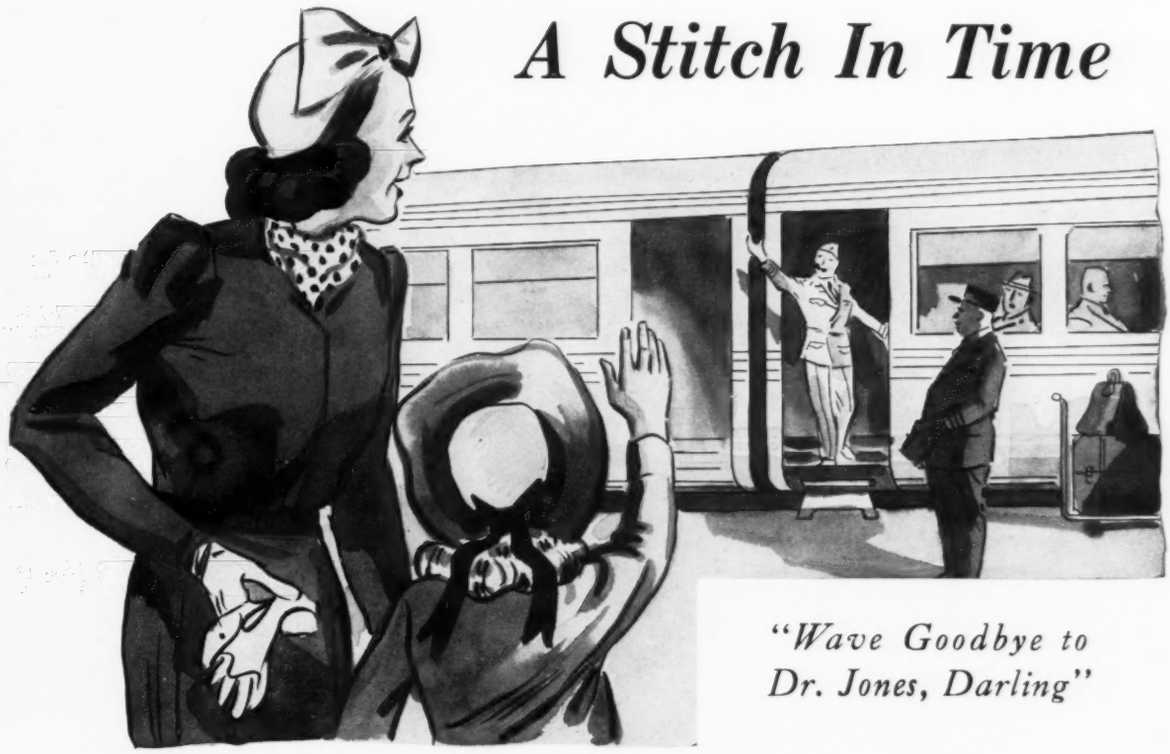
When Aluminum was being introduced into the textile mills, there was plenty of metal available for all uses. The idea then was to permit normal depreciation and replace the equipment when necessary. The war changed all that—all Aluminum now goes into war products—so the mills are having to get the maximum possible life from all of their equipment.

There are simple means of greatly extending the normally long life of Aluminum Alloy equipment. An occasional washing with soap and water, or polishing, may be all the metal needs. Paint or other protective coatings can be added. Alcoa engineers have been studying such problems for years. They are able and anxious to advise you. For this help, write ALUMINUM COMPANY OF AMERICA, 1939 Gulf Building, Pittsburgh, Penna.

**ALCOA**

**ALUMINUM**

# A Stitch In Time



*"Wave Goodbye to Dr. Jones, Darling"*

## DOCTORS and NURSES GOING to ARMY By the THOUSANDS!

An epidemic may start from the household of one of your employees as a result of inadequate medical attention.

*How would your business be affected if large numbers of your employees were either sick themselves or had to stay away from work to nurse sick members of their families?*

At no cost to you, by the plan explained herein, you can help prevent such a catastrophe.

It's easier to keep your employees well *and on the job*—than it is to replace them.

## FOR EXAMPLE

Your Business Needs these Hospital, Operation and Death Benefits

# MORE THAN EVER NOW!

*"Boss, we're short more men today —all sick!"*

## DOCTORS AND NURSES TO THE ARMY

**By the end of this year, 35,000 nurses and 40,000 physicians and dentists (⅓ of the medical forces of the U. S.) will be away at war. In all probability, many thousands more of them will go to the army next year. This increasing shortage of medical service may mean increasing shortage of man-power in your mill or factory. Not only may employee's personal illness increase and become chronic, but men may have to lay off from work in order to nurse an ill wife or child.**

***You can help prevent this with the Protective Plan.*** **At no expense whatever to the employer, the Protective Plan will furnish hospitalization for employees and their family. Such provision is valuable at all times but especially in this emergency when lack of proper medical attention may result in an epidemic which would prove costly to you and the War effort.**

**Some employees may now be chronic time-losers because of some condition which could quickly and permanently be corrected by surgery while it is now available; and thereafter they would become steady and more efficient workers for you.**

# NO COST TO THE EMPLOYER

For only a few cents a day (paid entirely by the employee) your workers can obtain protection not only for themselves but for their dependent wives and children also.

*The employer does not pay any of the premium.*

The following is a suggested plan of protection and is typical of plans now in force in hundreds of concerns throughout the South.

If this plan does not fill the needs of your employees, we feel confident that with the experience gained through arranging benefits for some of the largest concerns in the South, we can work out a plan of benefits that will not only be helpful to your employees but also beneficial to your business.

## A SAMPLE PLAN OF PROTECTION

| *For Employee* | *For his Wife and Children* | |
|---|---|---|
| | | HOSPITAL BENEFITS |
| $ 3.00 | $ 2.00 | Per Day—While confined in an approved hospital. |
| | | OPERATION BENEFITS |
| $ 75.00 | $ 50.00 | Class "AA" Operations—Surgeon's Fee. |
| 20.00 | 20.00 | Hospital Fees. |
| 60.00 | 30.00 | Class "A" Operations—Surgeon's Fee. |
| 15.00 | 15.00 | Hospital Fees. |
| 30.00 | 15.00 | Class "B" Operations—Surgeon's Fee. |
| 10.00 | 10.00 | Hospital Fees. |
| 15.00 | 7.50 | Class "C" Operations—Surgeon's Fee. |
| 5.00 | 5.00 | Hospital Fees. |
| | | MATERNITY BENEFIT (CASH) |
| $ 25.00 | ..... | Insured female employee. |
| ..... | $ 12.50 | Dependent wife. |
| $ 5.00 | $ 2.50 | LABORATORY AND INCIDENTAL HOSPITAL EXPENSE |
| | | DEATH BENEFIT |
| $500.00 | ..... | At death of employee. |
| ..... | $100.00 | At death of dependent wife. |
| ..... | 100.00 | At death of dependent children 15 to 18. |
| ..... | 75.00 | At death of dependent children 5 to 15. |
| ..... | 25.00 | At death of dependent children under 5 (excluding stillborn infants). |
| | | Above benefits payable for death from any cause, at any time or any place. |

*Your employees can not get this protection at Group Insurance rates and advantages unless you give them the opportunity to buy it.*

Many of them and members of their families because of age or physical condition could not get such protection under any other plan. We take all active employees and their families in under our plan without any increases in rates or restrictions, regardless of their age or physical condition.

**MAIL THIS CARD**

**FOR ADDITIONAL**

**INFORMATION**

(**See Other Side**)

**BUSINESS REPLY CARD**
First Class Permit No. 33, Section 510, P. L. & R., Birmingham, Alabama

No Postage Stamp Necessary If Mailed in the United States

**GROUP DISABILITY DEPARTMENT**

Protective Life Insurance Co.

Protective Life Building

BIRMINGHAM, ALABAMA

# YOUR INCREASED PAYROLL—

## *Where does it Go?*

{ *For Non-Essentials with no benefit to you or to your employees?* }

{ *For things of lasting value which do benefit you as well as your employees?* }

# PROFIT FOR { YOUR BUSINESS and YOUR EMPLOYEES } AT NO COST TO YOU

With their increased pay envelopes, your employees more than ever need to spend their money wisely. Just a few cents a day—*that is all it costs for EMPLOYEES AND THEIR FAMILIES to have hospital, operation and death benefits—AT NO EXPENSE TO YOU.* When emergencies arise, the pennies invested come back to employees as dollars. You profit, too, because the majority of employees are glad to spend their own money for this plan which gives them needed physical care and peace of mind and thereby makes them much better workmen. They will gladly apply for these benefits if you will give them the opportunity. Should the majority not apply, the plan does not become effective—there is no harm done and no expense to anyone except to us. Through our group plan your physically inefficient employees and their families can be cared for at no cost to you. All you do is to say: "See if a majority want it."

FILL OUT AND MAIL THIS CARD—NO POSTAGE REQUIRED

## *Yes, Please!*

*Without any obligation whatever, I would like to know more about some of the Employee's Financial Emergency Plans which you have now in force in Mills doing work similar to ours, and the names of such Mills.*

Name_____ Position_____

Address_____

Name of Mill_____

Type of Business_____

PROTECTIVE LIFE
INSURANCE COMPANY

Birmingham, Ala.

# ARKANSAS PRODUCTS

FOR ALL TEXTILE PROCESSES

| | | | |
|---|---|---|---|
| *KIER BOILING* | *SOAKING* | *SOFTENING* | *DELUSTERING* |
| *SCOURING* | *BLEACHING* | *SIZING* | *WATER-PROOFING* |
| *FULLING* | *PENETRATING* | *DYEING* | *STRIPPING* |
| *DEGUMMING* | *FINISHING* | *LUBRICATING* | *THROWING* |

## WHAT OF THE FUTURE?

*Yours...ours...and the Textile Industry*

**IT is characteristic of American genius that the textile industry, when deprived of strategic materials for basic operations, combines the skill and vision of chemist and executive in exploring the field of chemistry and its vast resources in the discovery and development of new products that maintain or increase the efficiency of textile wet-processing.**

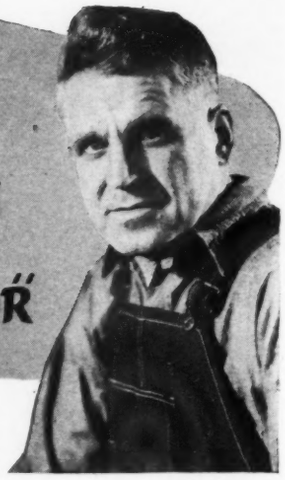
With well-trained personnel, laboratory technicians and executive staff working harmoniously in field, plant and laboratory, supported by a wealth of knowledge and experience gained in more than 35 years of intimate contact with the textile industry, the Arkansas Company offers a combination of resources, experience and ingenuity that may be a vital factor in your future. ★ As the difficulty of maintaining normal business increases, it is logical to look to a source such as this for continued, capable service.

ARKANSAS CO·INC·

NEWARK ESTABLISHED 1903 NEW JERSEY

AC INC

# MACHINERY MAINTENANCE IS A CINCH, NOW WE'RE USING THE SET SCREWS WITH "THE THIRD FACTOR"



# UNBRAKO

REG. U. S. PAT. OFF.

**SELF-LOCKING HOLLOW SET SCREWS**
***with the KNURLED POINTS***

SIZES
No. 4 to
1½" Diameter
PAT'D AND PATENTS PENDING

KNURLING of Socket Screws originated with "UNBRAKO" years ago.

## ...and here are the 3 FACTORS

***First***...Unbelievable Strength

***Second***...Accuracy

***Third***...They *won't* shake Loose!

The reason for the "Third Factor" is that the *knurled points* make "UNBRAKO" Set Screws *self-locking*. As soon as these screws are set up as is customary, the *knurled points* "dig in" and hold the screws tight regardless of vibration. Yet they can be backed out and used again and again. Don't run the risk of having set screws work loose and cause trouble when you can prevent it by standardizing on "UNBRAKO" Self-Lockers. Get "UNBRAKO" protection now.

UNBRAKO WELT-BAR SCREWS

**Uniformly strong and accurate, "UNBRAKO" Welt Bar Screws are giving extra satisfaction in hundreds of mills. Would you like samples?**

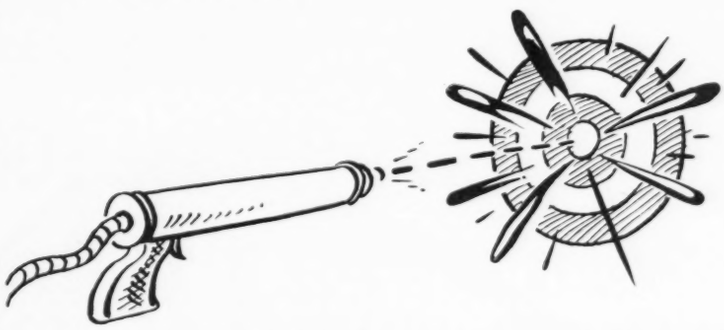
Write us today for Catalog and complete information, or get in touch with your local mill supply house. The chances are they can supply your needs right from stock.

# STANDARD PRESSED STEEL CO.

**JENKINTOWN, PENNA., BOX 582**

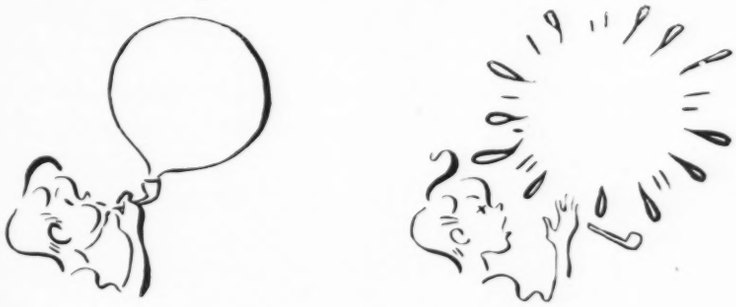
**BRANCHES: BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO**

# Among the Big Guns OF THIS WAR is the Grease Gun!



**EVERY LUBRICATION JOB** should be a bullseye today — enough lubricant, not too much. With anti-friction bearings, remember grease guards the steel rolling elements primarily against *corrosion,* not friction. Too much grease only *promotes* heat!

**AS LONG AS** oil prevents metal-to-metal contact in sleeve bearings, wear is impossible — *if no grit is present!* Thus it pays to keep oil covers tight, dust seals in good condition.

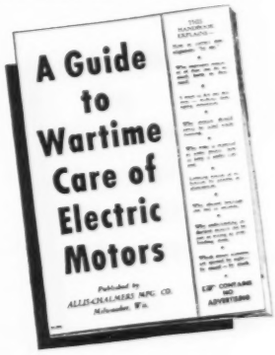


**AN OIL FILM** often is no thicker than the wall of a soap bubble — can fail just as suddenly *and completely.* To protect it, maintenance guards against pressures from misalignment.

**MAINTENANCE IS IN THIS WAR WITH EVERYTHING IT'S GOT—AND THAT'S *PLENTY!* FOR EXAMPLE—HERE ARE WAYS PROPER CARE OF MOTORS HELPS INSURE FULL—*AND CONTINUED*—U. S. PRODUCTION!**

FINER lubrication than ever is vital today — but it's only *one* method used by maintenance to step up the wartime efficiency of motors.

Fighting dust, moisture and stray oil is important, too — and all such means of safeguarding motors are presented in Allis-Chalmers' new maintenance handbook . . .




"A Guide to Wartime Care of Electric Motors" describes all nine main motor enemies in detail — tells how to fight each of them.

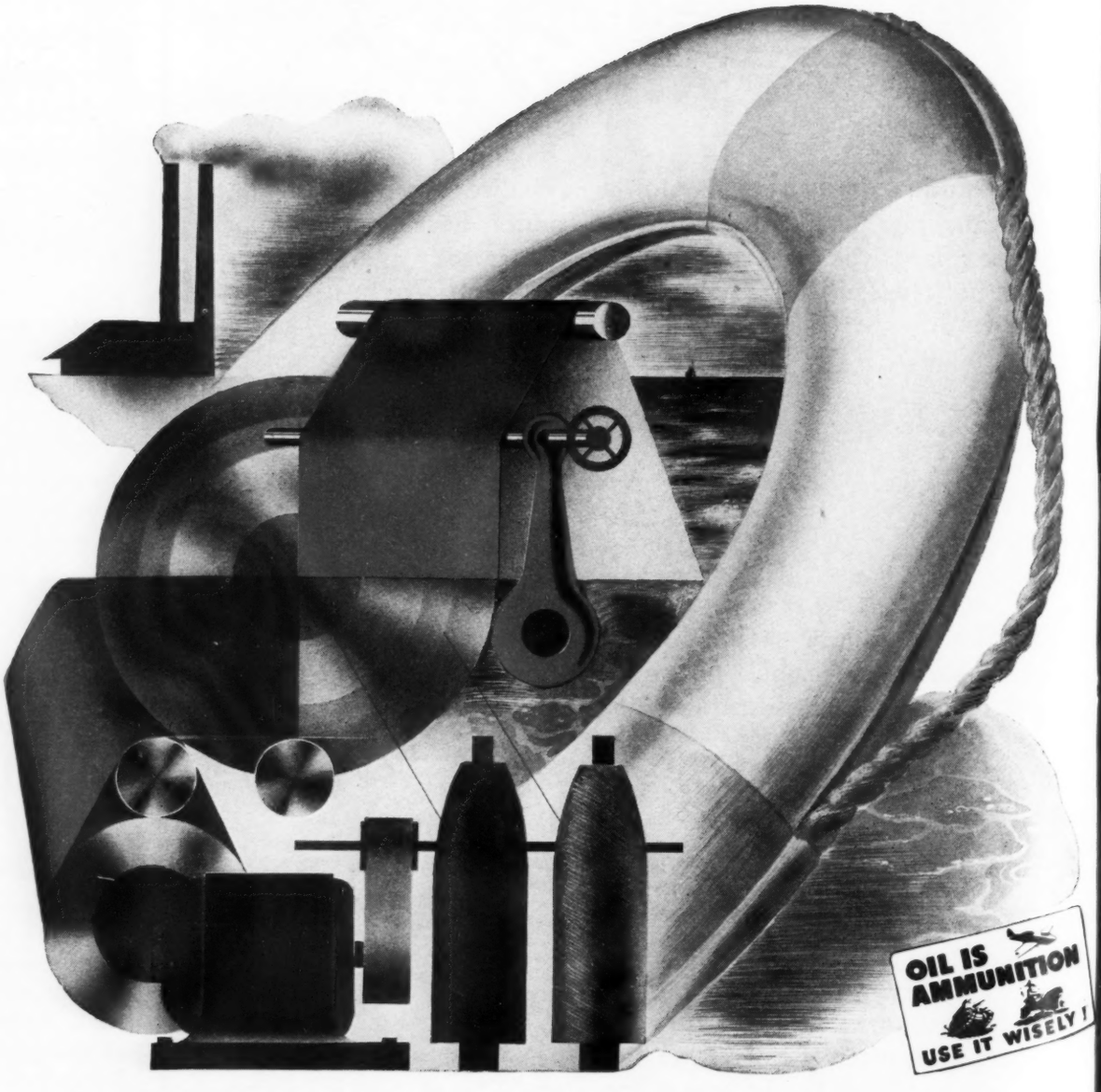
It's fully illustrated — applies to *all* standard makes of general-purpose motors — contains no advertising. Write now for *your* free copy. ALLIS-CHALMERS MFG. CO., MILWAUKEE.

A-1552

**ALLIS-CHALMERS**

WE WORK FOR VICTORY WE PLAN FOR PEACE

# *life preservers...* for



# busy textile machines

## TIDE WATER TEXTILE OILS

### help maintain maximum production with minimum wear

Textile operators who depend on Tycol Textile Oils enjoy this double insurance against machinery breakdowns, costly repairs and interrupted production:

1. Tycol Textile Oils are quality lubricants, made by the most modern scientific methods.
2. Every Tycol lubricant is engineered to meet a specific operating condition, and there's a Tycol Oil or Grease for every lubricating need.

For these two important reasons hundreds of textile mills are safeguarding peak production schedules by using Tycol Textile Oils right down the line – from power plant to finishing.

A Tide Water lubrication engineer will be glad to consult with you and recommend the proper Tycol lubricating oils and greases to assure maximum production at minimum cost. There is no obligation to you for this survey. Write for full information to Tide Water Associated Oil Company, 17 Battery Place, New York, N. Y.

**DRUMS! DRUMS! DRUMS! DRUMS!**
War needs make it extremely important that all empty drums be returned immediately.

INDUSTRIAL TYCOL OILS-GREASES

**TIDE WATER ASSOCIATED OIL COMPANY**
EASTERN DIVISION: 17 BATTERY PLACE, NEW YORK
Principal Branch Offices: Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

**MAKERS OF THE FAMOUS VEEDOL MOTOR OIL**

# PICKER REPAIR PARTS WHEN YOU NEED THEM

WE keep on hand a very complete stock of all parts for Kitson pickers, and can usually ship the same day an order is received. We also can furnish beaters, ball bearings, screens and many other parts for other makes of pickers.

Under wartime conditions, it is of the utmost importance to keep machines running constantly and to be able to get prompt delivery on repair parts for keeping them running constantly.

In an emergency, a telegram or a telephone call will have the necessary repair parts at your plant the following day.

It is also a good idea to check your stock room and order picker parts on which the stock is low or is exhausted.

We can completely rebuild your pickers exactly like new, and when pickers are practically worn out and in need of more than ordinary repair parts, they can be completely renewed at far less than the cost of new machines with new frames.

**AldricH MachinE**

**Greenwood, WorkS South Carolina**

# ✓MORE PRODUCTION,
# ✓CLEANER GOODS
## WITH
## STA-PUT TREATED OILS

Sta-Put Lubricants are treated to make them leak resistant, to increase their film strength, to make them "stay put" and last longer.

That's why one drum of Sta-Put may last longer than two drums of ordinary mineral oil, when used on looms, comb boxes, lineshafting and other needed places in your mill.

You eliminate messy dripping from your hangers or machine parts; you put an end to oil-spotted cloth; you get a greater oiliness and keep the oil at work preventing costly friction and wear.

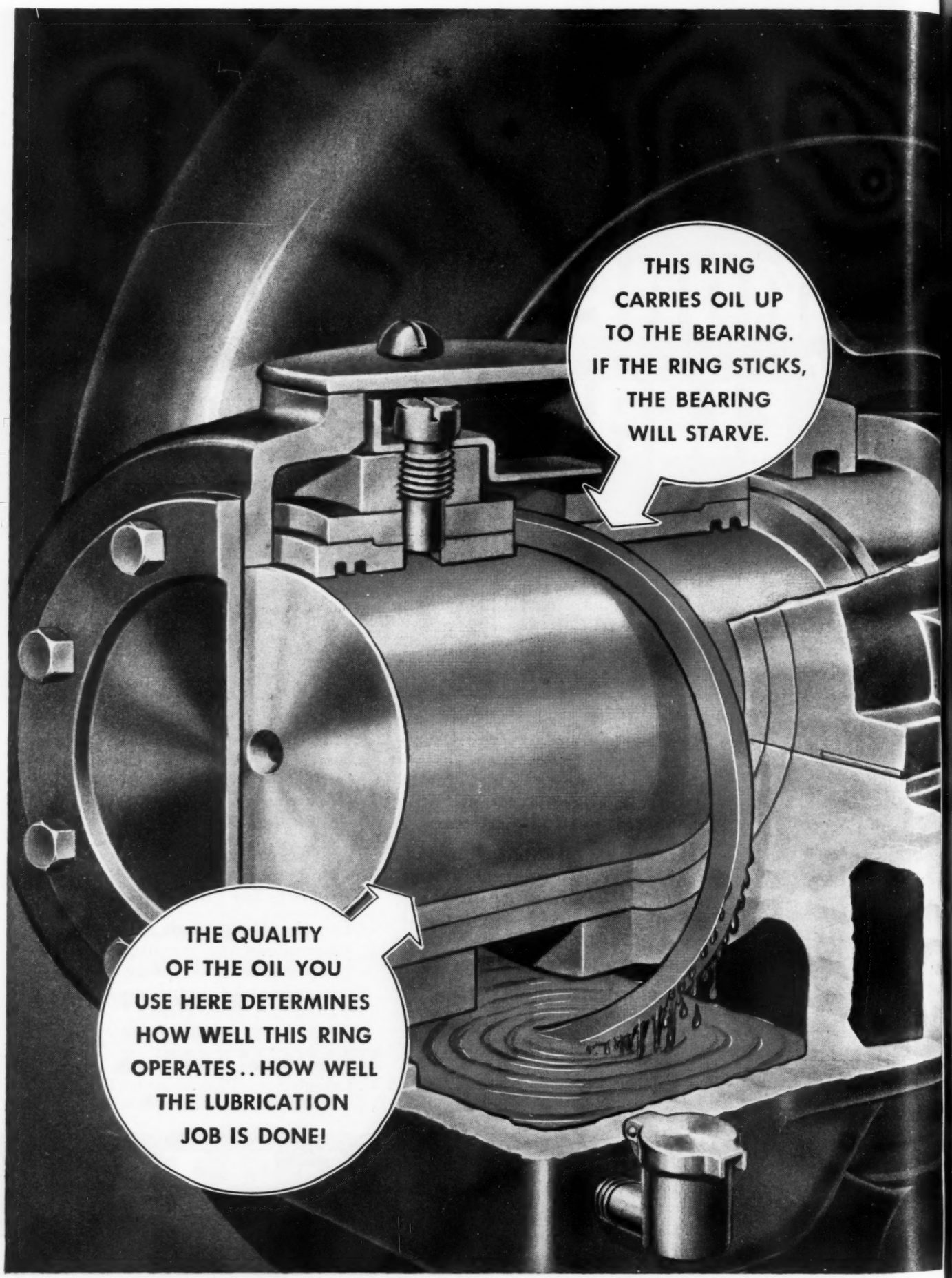
All these advantages you obtain when you specify Sta-Put Lubricants for your plant.

Let the Houghton Man survey your needs and recommend the proper grade for your mill requirements, and you'll use "Less Oil, Less Often."

**E. F. HOUGHTON & CO.**
303 W. Lehigh Ave., Philadelphia, Pa.
1301-05 W. Morehead St., Charlotte, N. C.

TODAY-
MORE THAN EVER
EXPERIENCE COUNTS!

**HOUGHTON**
**PRODUCTS FOR THE TEXTILE INDUSTRY**


THIS RING CARRIES OIL UP TO THE BEARING. IF THE RING STICKS, THE BEARING WILL STARVE.
THE QUALITY OF THE OIL YOU USE HERE DETERMINES HOW WELL THIS RING OPERATES.. HOW WELL THE LUBRICATION JOB IS DONE!

# If This Ring Sticks You're Stuck!

## WARTIME DEMANDS MAKE THE HIGHEST QUALITY LUBRICANTS FOR ELECTRIC MOTORS A "MUST"!

*Problem:* Look at the ring in the picture at the left. It must pick up oil from the well beneath the bearing and deliver it to the top of the journal. If the oil is too thin, not enough oil will reach the bearing. If it is too thick or if deposits are formed, the ring may stick and "starve" the bearing.

*Answer:* *Gargoyle Etna Oil Heavy Medium* is a special, electric-motor oil of correct body. Its high stability effectively resists oil thickening and the formation of deposits that may cause the ring to stick. The result is, the bearing is assured an ample supply of oil.

For grease-lubricated, electric-motor bearings, we recommend *Gargoyle Greases BRB.* These anti-friction bearing greases offer great resistance to oxidation. This and their tenacious films protect the polished surfaces against corrosion and wear. They will not form hard, soapy deposits that restrict the free movement of balls or rollers. They help minimize leakage.

TO HELP MAINTAIN WARTIME PRODUCTION, CALL IN

**SOCONY-VACUUM for "Correct Lubrication"**

GARGOYLE Lubricants

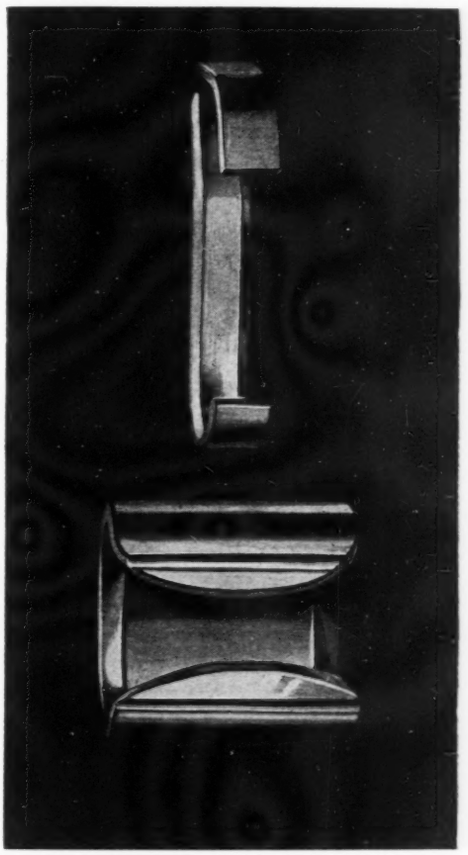
SOCONY-VACUUM OIL CO., INC. — Standard Oil of N. Y. Div. — White Star Div. Lubrite Div. — Chicago Div. — White Eagle Div. — Wadhams Div. — Southeastern Div. (Baltimore) — Magnolia Petroleum Company — General Petroleum Corporation of Calif.

General Nathan B. Forrest—who is credited with this saying—fought in '61, but he certainly understood the principles of war today! Whatever side strikes *first* with greater *force* will win the battles. If America is to win, all our speed and energy will be needed, on the military front and on the *industrial* front.

UNIVERSAL
RING

# RAYON MILLS WORK FASTER FOR A WARRING NATION

Even before Pearl Harbor, American mills were producing rayon at an unusual rate of 400 million pounds. Today, they're producing faster than ever, to supply yarns and fabrics for a nation that must have textiles, yet must restrict consumer use of many fibers. Complex, high-speed twister frames are needed for rayon production: these frames operate faster—with maximum efficiency—when they're equipped with Ring Travelers of high quality.



Universal Standard Ring Travelers are designed for every fiber —and particularly for the rayon industry. Because they're the focal points of good yarn, they're precision-made, from the finest steel alloys. Then they're rigidly inspected, for durability —balance—uniformity in size and weight. That's why so many experienced mill men always specify U. S. Travelers—and why these travelers will help your machines produce smooth, strong rayon yarn, in perfect packages.

For the special benefit of the rayon trade, the Ne-Bow Patented Vertical Ring Traveler has been designed to improve the throwing process. Pivot action is eliminated, and the traveler is kept in close contact with the device for lubricating the ring. This helps distribute lubricant evenly over the ring's entire inner surface. The traveler lasts longer, and twist is more even.

## U. S. RING TRAVELER CO.

PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN, Pres. and Treas.

*Southern Representatives*

William P. Vaughan, P. O. Box 792, Greenville, S. C. Torrence L. Maynard, P. O. Box 456, Belmont, N. C.
William H. Rose, P. O. Box 792, Greenville, S. C. Oliver B. Land, P. O. Box 158, Athens, Georgia

U.S. RING TRAVELER CO.

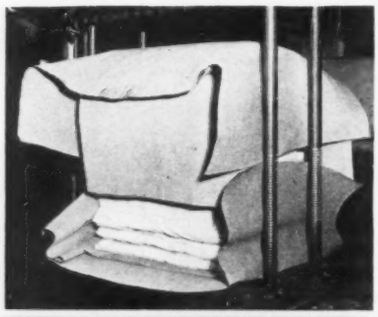
*"A Traveler for Every Fibre"*

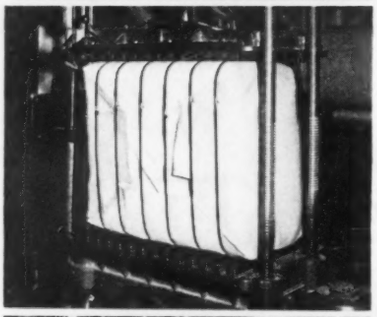
# STANDARD TRAVELERS

LOST—Burlap for the duration.

FOUND— Excellent and Economical Wrapping Material

# Fulton Waterproof BALING PAPERS





You may be sure of a satisfactory burlap replacement with these flexible, moistureproof and dustproof coverings. Especially developed for use in our own mills and factories when the supply of burlap was cut off, and when the need for using all available cotton goods for wartime requirements became apparent.

FULTON Baling Papers which have been in actual use for almost a year in our own mills, as well as thoroughly tested by others, can be furnished in widths and weights to suit your needs. Prompt shipment from our stocks on short notice. Important too is the exceptionally low cost. Write for prices — they will surprise you. Adequate samples furnished upon request for necessary testing.

Write

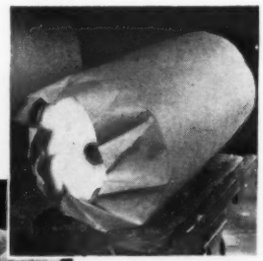
**Fulton Bag & Cotton Mills**

*Manufacturers Since 1870*

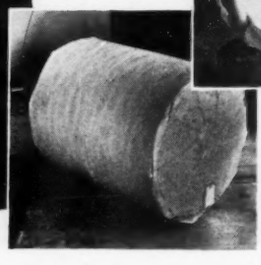
ATLANTA ST. LOUIS DALLAS

MINNEAPOLIS NEW YORK

NEW ORLEANS KANSAS CITY, KAN.



**CRINKLE KRAFT** paper bonded with a special waterproof asphalt adhesive makes an extra tough wrapping for any size bale.



**FLAT KRAFT** paper bonded with a laminated asphalt adhesive insures an easy-to-handle, extra tough wrapping that is suitable for rolls of cotton goods.

# more production-

**for**

**textile mills**

**everywhere!**

Lint can't choke these motors

Westinghouse Lint-Free Motors are designed for individual drives on pickers, winders and roving, spinning and twisting frames.

**Special design insures clean, cool, continuous operation...prevents shutdowns...loss of time.**

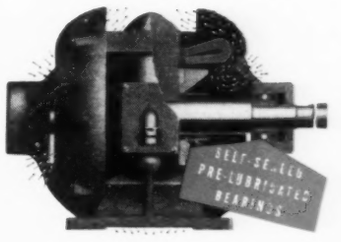
Lint-Free Westinghouse Textile Motors solve one of the most troublesome problems in textile mills—the problem of lint interference with production drives.

Westinghouse Textile Motors are designed to use large volumes of lint-laden air for cooling, without permitting any lint to collect inside the motor. Air passages are exceptionally large. There are no pockets or corners where lint might cling—inner surfaces have a slick, smooth finish.

In addition, motor bearings are factory-lubricated and factory sealed. The grease stays in—lint and dirt stay out. No recurring "grease spots" to invite lint accumulations.

Thousands of Westinghouse Lint-Free Motors are in daily use in round-the-clock operation. For production with less delays, less motor maintenance cost, see Westinghouse. Your representative can give you the complete story. Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., Dept. 7-N.

J-21216




The cleanest running motor in the textile industry. Note the large unobstructed air passages — the compact, sealed ball-bearing construction.

**Westinghouse**

**LINT-FREE MOTORS**

A Satisfied Customer writes:
"Those Tuff-Special Fancies are wonders. They have reduced my stripping waste so greatly that the superintendent asked me to explain the 33⅓% difference this year under last year. I could and did give entire credit to your Fancies!"
TUFF SPECIAL

## A NEW FOUNDATION - that is absolutely uniform to take the place of leather in Fancies and Hand Cards

WE have always pointed with pride to our Fancies, years having been spent in producing a particular type of leather to accomplish certain and necessary results. Yet in the finest of leather there is chance for variation in tensile strength, in "stretch," in pliability, and in uniformity; laps or joints could not be avoided. Neither could the effect of oil which caused it to over-stretch.

We are proud of the record of TUFF-SPECIAL, for all these faults are completely eliminated as a result of constant research work. This new product is wholly owned and controlled by Howard Bros. So we are able to offer you a perfect foundation for thickness, uniformity, absolutely oil- and water-proof, without hard and soft spots, and completely free from laps or joints — a combination that means perfection in a Fancy.

All the above is being demonstrated in hundreds of mills which are now sending repeat orders. *You, too, should have the same advantage!*

# HOWARD BROS. MFG. CO.

WORCESTER, MASS.

**Southern Plants:** Atlanta, Ga., Gastonia, N.C. **Branch Offices:** Philadelphia, Dallas
**Canadian Agents:** Colwool Accessories, Ltd., Toronto 2, Canada

**CARD CLOTHING is essential for DEFENSE**
*The wool of 10 sheep must be carded to outfit each soldier!*

**PRODUCTS:** *Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants • Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted-Eye and Regular Wire Heddles.*

# HERE IS INDUSTRY'S ANSWER — TO THE *Gilmer* NATIONAL POWER-RECOVERY PLAN

"To say the least, the program which your Company has inaugurated towards the objective of conserving power in industry is intriguing and most timely."

Motor Div., General Electric Company

"We extend our congratulations on your National Power-Recovery Plan which is so well explained in the booklet."

Johnson & Johnson

" want to congratulate you upon your 'National Power-Recovery Plan' and its method of presentation "

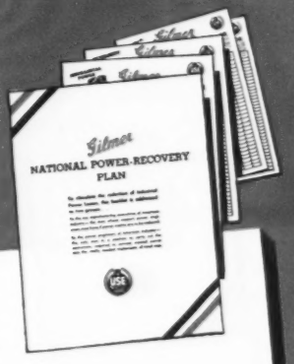
Leeds & Northrup Company

USE WHAT YOU LOSE

Typifying the reaction to the Gilmer National Power-Recovery Plan, the above comments give positive proof that Industry is awake to the danger of a power shortage, and recognizes the Plan as a practical stitch-in-time.

Approved by the WPB, the Power-Recovery Plan is offered absolutely free to industry, as Gilmer's contribution to the war effort. The "know-how" of leading power engineers has been incorporated in the Plan, and you'll find a wealth of technical information on each of the power services—Electricity, Steam, Mechanical Transmission, Compressed Air, Water, Refrigeration, Boilers, Prime Movers.

Enlist YOUR plant in this vital battle against power waste. And don't wait until power runs short . . . act NOW. Just send in the coupon, and the Plan will come to you promptly . . . all contained in one convenient booklet.




L. H. GILMER CO., Tacony, Philadelphia, Pa.

Gentlemen:

Please send us, without cost or obligation, a copy of the National Power-Recovery Plan, marked for the attention of:

NAME_____

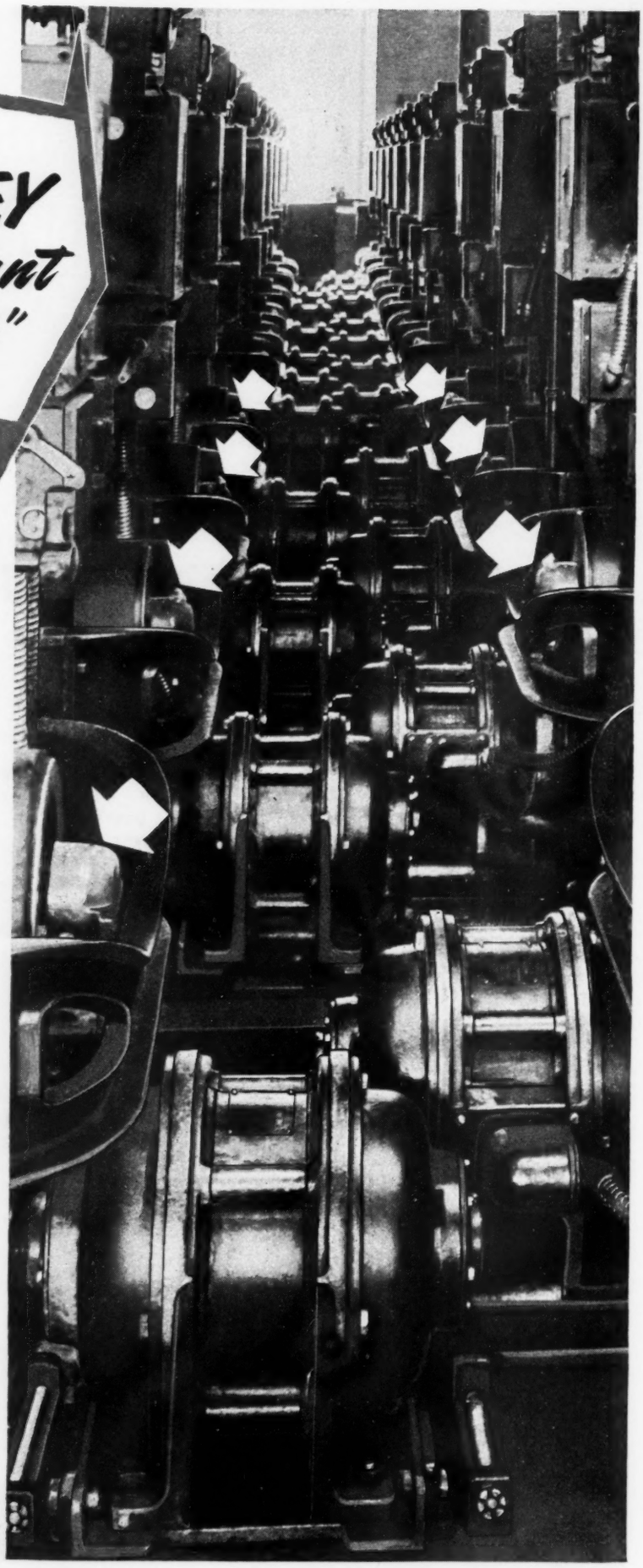
FIRM_____

ADDRESS_____

Gilmer BELTS

**L. H. GILMER COMPANY** TACONY, PHILADELPHIA, PA.
*The Oldest Firm of Rubber Fabric Belt Specialists*

# This POWER ALLEY Was A Constant "Headache"



The "power alley" in this mill was eating up money before Fafnir Ball Bearing Pillow Blocks replaced plain bearings on these high-speed spinning frames. Lubrication cost was excessively high – and due to liberal lubrication, leakage of oil on expensive belting caused it to wear out long before its time. Much yarn was lost as the result of thrown oil. Besides, yarn residue, dripping oil and friction made a perfect set-up for a fire.

The substitution of Fafnirs reduced starting and running torque on the high speed shafts and cut power loss to a minimum. Because the Fafnir units required lubrication only twice a year, belt slippage and belt wear were practically eliminated – saving power, labor and money. The clean running Fafnirs prevent spoilage of yarn.

This "turning point" to power conservation and the reduction of operating costs and trouble was quickly and easily made. Simplified installation made possible by the Fafnir Wide Inner Ring Bearing with exclusive Self-Locking Collar – no machining, shaft shoulders, or lock-nuts required – eliminated lost production time.

Have you considered what the substitution of Fafnir Ball Bearings might do for your power wasting drives? The Fafnir Ball Bearing Company, New Britain, Connecticut. Branch Offices: Atlanta . . . Birmingham . . . Boston . . . Charlotte . . . Dallas.

# FAFNIR

## Ball Bearings

**THE BALANCED LINE —**
**FOR ORDNANCE, AIRCRAFT AND INDUSTRIAL MACHINERY**

# A REPUTATION IS A LIVING THING

Quality is a matter of refinements steadily bred into a product and sensitively cultivated.
General's policy is guided by faithful adherence to fundamentals through fluctuating conditions.
Ours is an attitude of perennial responsibility toward all those who deal with us.
This is how a business becomes planted deeper and deeper in its field of operations.
This is how our business grows and flourishes and its symbol becomes synonymous with Quality.

**GENERAL DYESTUFF CORPORATION·NEW YORK**

The Finished Product is the Real Test of Wet Processing Effectiveness
FOR HOSIERY AND UNDERWEAR
FOR YARNS AND PIECE GOODS
FOR WOOLENS AND WORSTEDS
WET PROCESSING AGENTS
BURK-SCHIER
FOR EVERY TEXTILE APPLICATION

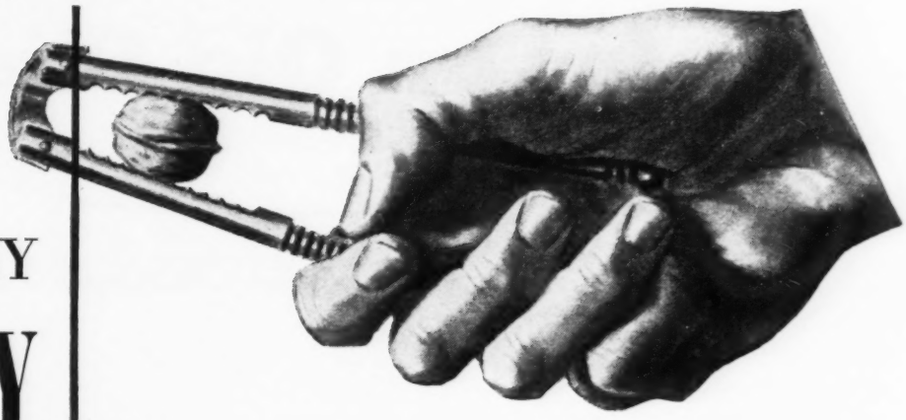
**For twenty years, Burk-Schier wet-processing agents have met the test of chemical effectiveness by the quality of the finished products which they have helped to produce. Textile Manufacturers have found Burk-Schier wet-processing agents most effective and economical for scouring, bleaching, dyeing and finishing. There is a Burk-Schier product made to suit your needs.**

**BURKART-SCHIER CHEMICAL CO., Chattanooga, Tenn.**

MANUFACTURING CHEMISTS FOR THE TEXTILE INDUSTRY

PENETRANTS • SOFTENERS • SOLUBLE OILS • FINISHES • CHEMICALS

# BRING ON THOSE QUESTIONS

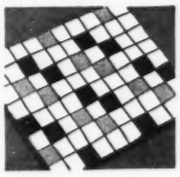


## THAT'S WHY 4-PLY SERVICE WAS BORN!

No matter what phase of rayon production interests you, our 4-PLY SERVICE can be of aid to you. We don't know all the answers, of course. But, over a period of years, we have discovered much of value to those in the textile industry. We expect to amass more "know how"... to develop new fibers and new techniques ... to solve more problems as we go along. This whole storehouse of information is available to you without a penny of cost. If you have a question, bring it direct to a great rayon headquarters—American Viscose Corporation. We welcome opportunities to be of assistance.

1 ***Fiber Research.*** In our laboratories and pilot plants scientists are constantly at work ... perfecting types of rayon yarn and fiber now available ... creating new types to meet specific problems.

2 ***Fabric Development.*** A great department is devoted to this phase of the rayon industry. It can work with you ... help you design new and successful fabrics which you can produce efficiently on your existing machinery.



3 ***Mill Technique.*** Do you have a mill problem? Our Textile Unit, which is equipped with standard machinery for virtually every phase of textile production, can help you to solve problems in weaving, dyeing, and finishing.

4 ***Sales Assistance.*** The CROWN* Tested Plan helps sell serviceable rayon fabrics ... from raw materials to ultimate consumer. This plan helps you to establish and maintain the quality of your new fabrics containing CROWN Rayon.

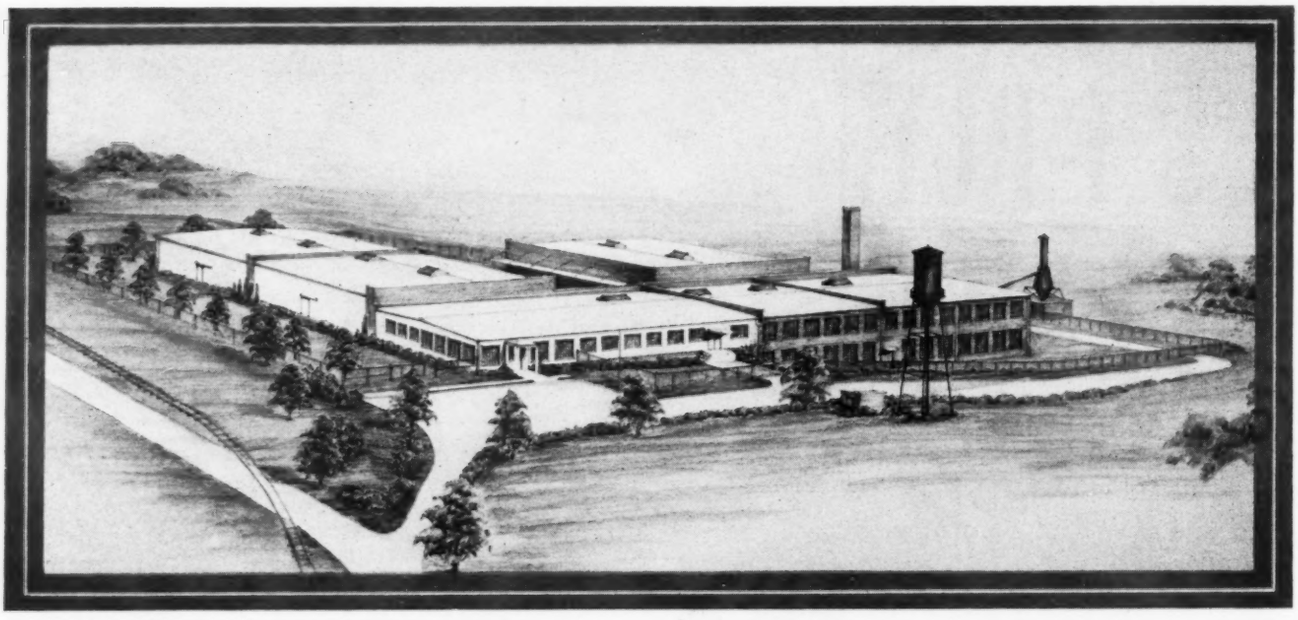
## AMERICAN VISCOSE CORPORATION

*Producers of* CROWN *Rayon Yarns and Staple Fibers*

*Sales Offices:* New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.
*Plants:* Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

*Reg. U. S. Pat. Off. Copr. 1942—American Viscose Corp.

# A NEW JOB for an Old Client

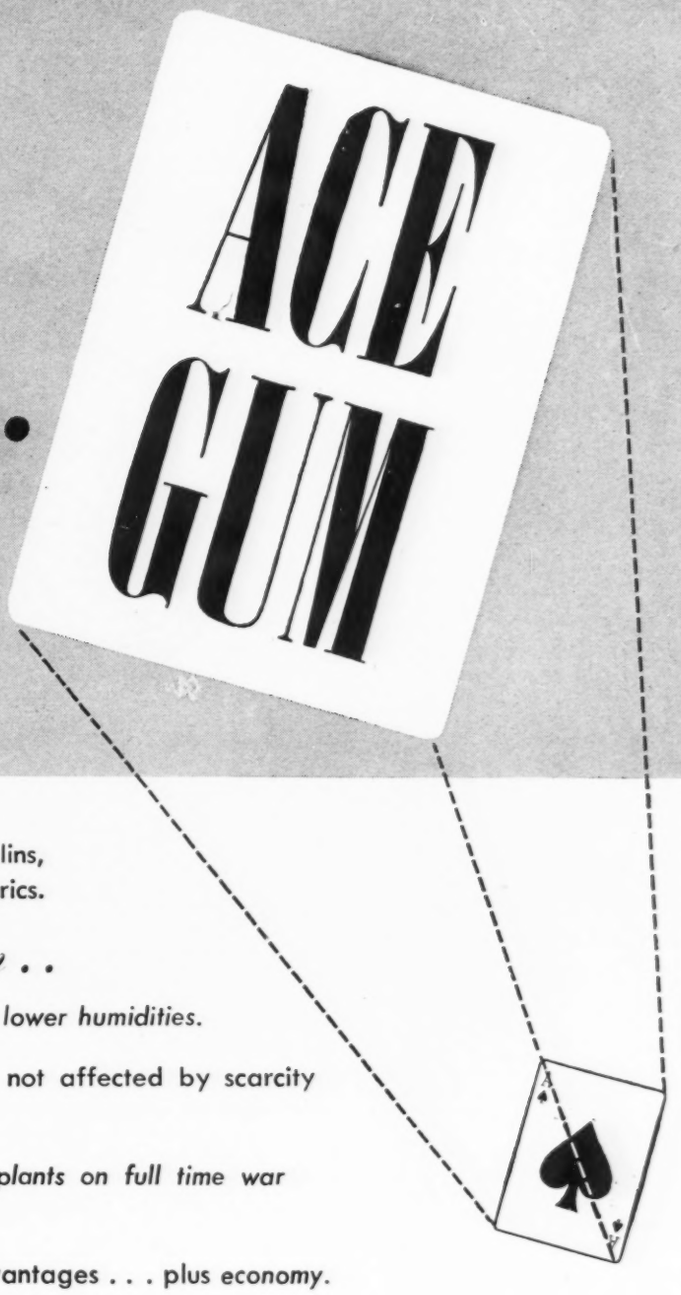


West Point Manufacturing Company is a long-time client of ours. We have served them as architects and engineers for 25 years, on many different kinds of projects. One of the latest is shown above —a new plant at Fairfax, Alabama, for the West Point Utilization Company, the division of West Point Manufacturing Company whose special function is to process cotton waste.

Length of service to clients is a matter of pride with us; so is the fact that we are continually adding new names to our list of clients. Engineering knowledge and experience are the stock-in-trade of Robert and Company's staff. Their services on any project, large or small, assure you of economy and efficiency.

ROBERT AND COMPANY
INCORPORATED
*Architects and Engineers*
NEW YORK • ATLANTA • WASHINGTON

# YOUR TRUMP CARD...




For warp sizing cotton yarns for Army poplins, herringbones and shirtings, and other fabrics.

*Stein-Hall Ace Gum . .*

- ♠ *Assures high weaving efficiency in lower humidities.*
- ♠ *Made of domestic materials* . . . not affected by scarcity of ingredients.
- ♠ Cooks quickly . . . *important in plants on full time war work where every minute counts.*

**Stein-Hall ACE GUM offers you these advantages . . . plus economy. Ask for a trial lot.**

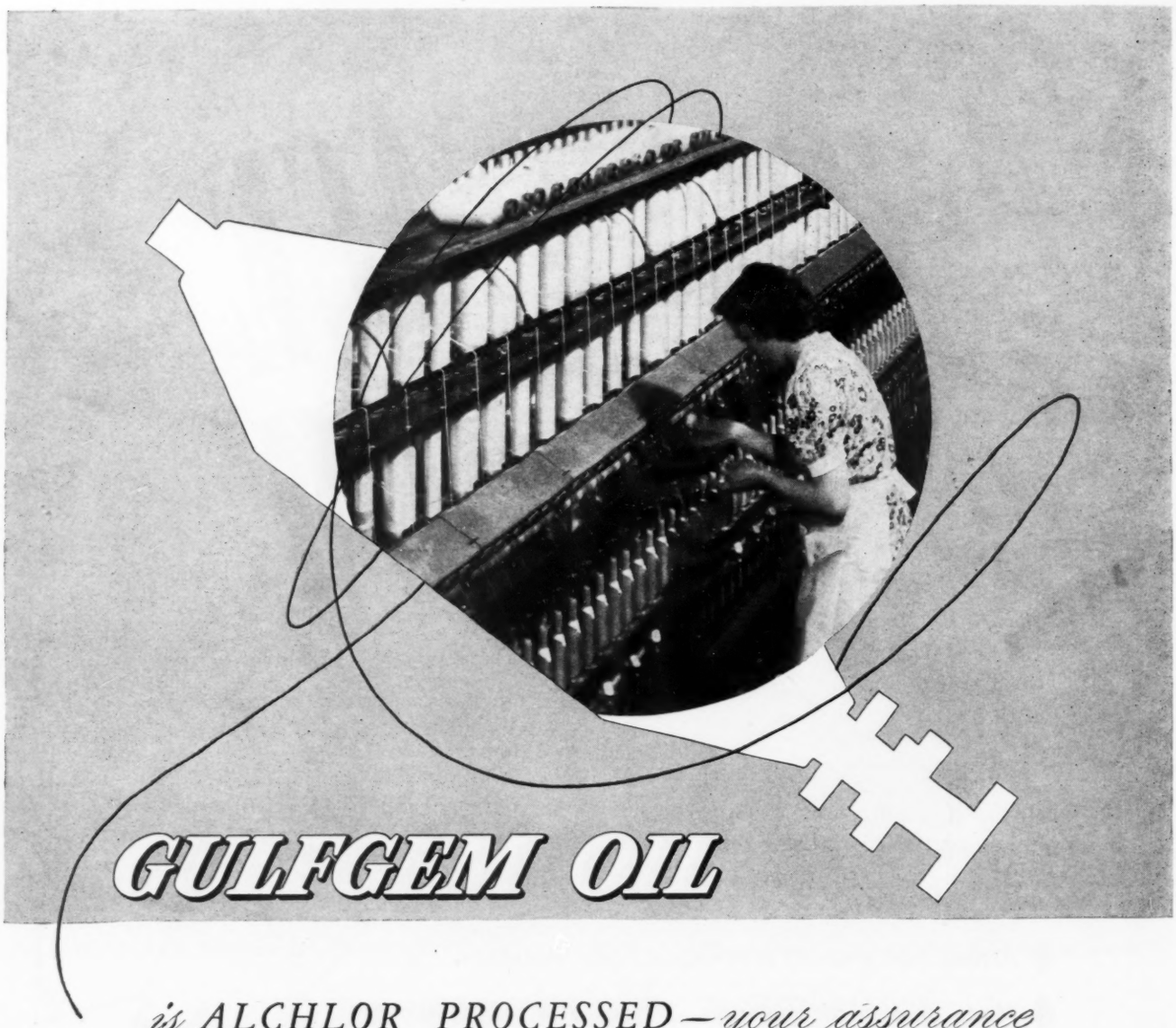
Ace Gum is only one of our line of high quality special textile sizing, finishing and printing starches and gums. Our research and field technical staffs are ready to help you solve your problems . . . *for the duration and afterwards.*

## STEIN, HALL MFG., CO. ★ STEIN, HALL & CO., INC. ★ STEIN, HALL, LTD.

2841 South Ashland Ave., Chicago 285 Madison Ave., New York City 250 Van Horne St, Toronto, Can.
1011 Johnston Building, Charlotte, N. C.

LABORATORIES AT: NEW YORK • CHICAGO • CHARLOTTE • PROVIDENCE • LONG ISLAND CITY, N. Y.

**76 YEARS OF STARCH SERVICE ★ A TEXTILE STARCH FOR EVERY TEXTILE PURPOSE**




*is ALCHLOR PROCESSED—your assurance*

*that it provides better spindle lubrication*

**Gulf's Alchlor Process is the most effective method known for removing impurities and unstable hydrocarbons from oil**

YOU are sure of better lubrication for your spindles when you put Gulfgem Oil in service. For this highest quality lubricating oil is not only refined by conventional methods, but is super-refined by the Gulf Alchlor Process, the most effective method yet known for removing impurities and unstable hydrocarbons from oil—the undesirable constituents which cause oxidation and gum formation.

Thus Gulfgem Oil provides a tough and stable film which insures minimum wear, minimum ends down, minimum power consumption, and maximum intervals between spindle base cleaning periods. Gulfgem Oil is the world's finest oil for spindle lubrication!

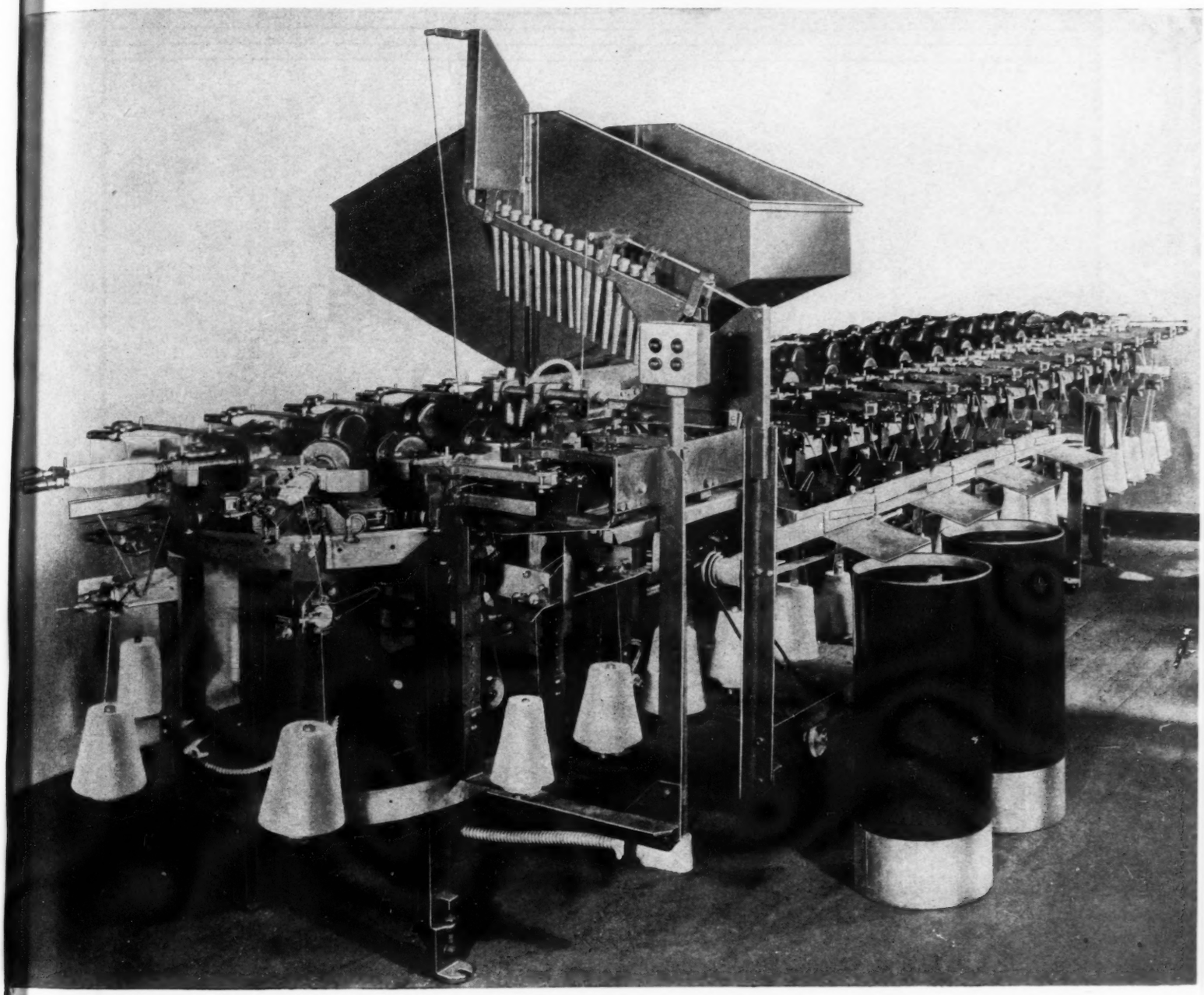
We suggest that you talk with the Gulf engineer in your vicinity about this remarkable spindle lubricating oil at your first opportunity. He will be pleased to give you complete details—without obligation.

GULF INDUSTRIAL LUBRICATION

*GULF OIL CORPORATION · GULF REFINING COMPANY*

*GULF BUILDING · PITTSBURGH, PA.*

# AUTOMATIC QUILLER



## COMPLETE AUTOMATIC OPERATION

*Dump Empty Bobbins in Hopper*
*the Machine Does the Rest*

## One Automatic Head Will Operate 40 to 120 Spindles

**LOWEST INVESTMENT COST ★ LOWEST LABOR COST**

# ABBOTT MACHINE COMPANY

**Wilton, N. H.**

***Southern Representative, L. S. Ligon, Greenville, S. C.***

# L. F. Dommerich & Company

*Executive and General Offices*

271 MADISON AVENUE
NEW YORK, N. Y.

**Telephone: AShland 4-8650**

# FACTORS

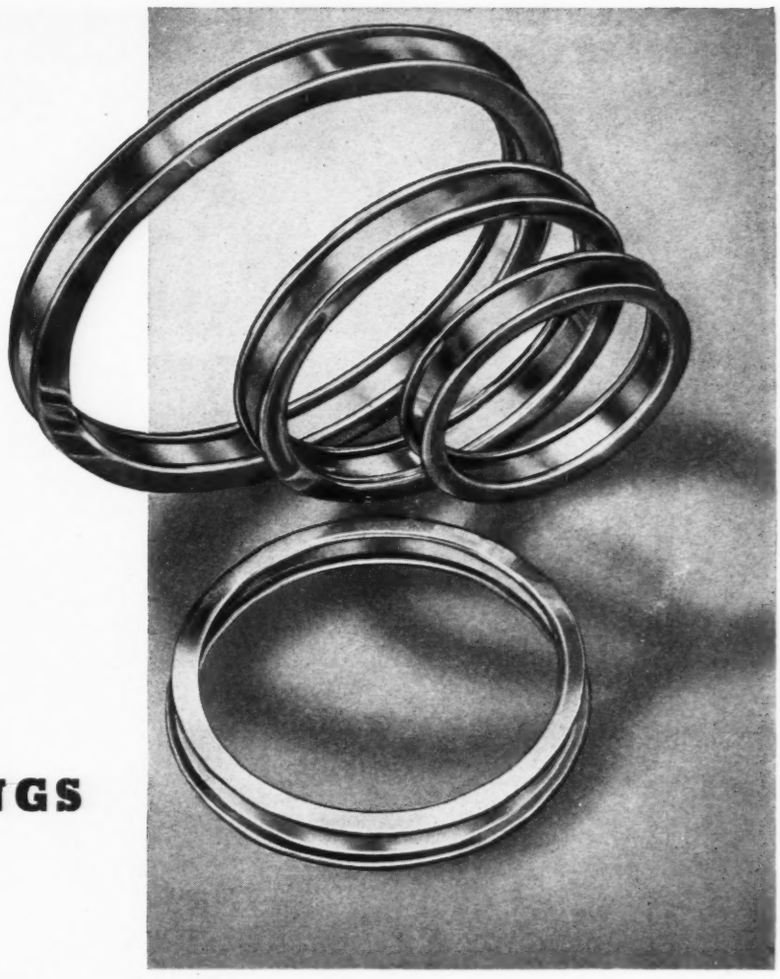
For Manufacturers and Merchants

*Inquiries as to our services solicited*

•

ESTABLISHED 1840

**Start at Normal Speed**



**PAWTUCKET RINGS**

# *Vitritex* FINISH

## Require no breaking in

There are no unusual precautions to observe when you install Pawtucket Rings. Production can be maintained at normal speed from the moment they are put into service. There are no delays—and no "take it easy" breaking-in periods. This is possible because of the Vitritex Finish—an exclusive manufacturing process which gives the rings a surface as hard as steel, as smooth as glass and almost impervious to wear.

We will be pleased to arrange a trial installation, or if you prefer, furnish sufficient samples without cost for your own test purposes.

***GIVE YOUR TRAVELERS "A TURN FOR THE BETTER"***

**Pawtucket SPINNING RING COMPANY** • CENTRAL FALLS, RHODE ISLAND

(Subsidiary of Saco-Lowell Shops)

**Water-Proofing Agents for Government Work**

**SANDOZ** CHEMICAL WORKS, INC.

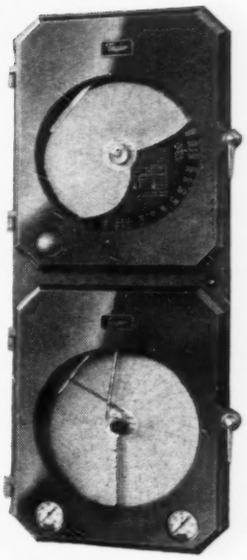
61-63 VAN DAM STREET, NEW YORK, N. Y.

BOSTON, MASS. • CHARLOTTE, N. C. • PATERSON, N. J. • PHILADELPHIA, PA. • PROVIDENCE, R. I. • CHICAGO, ILL. • LOS ANGELES, CALIF.

SANDOZ

# LOAD THE KETTLE AND PUSH THE BUTTON!

## Taylor Time Schedule Controller does the whole size-cooking job automatically

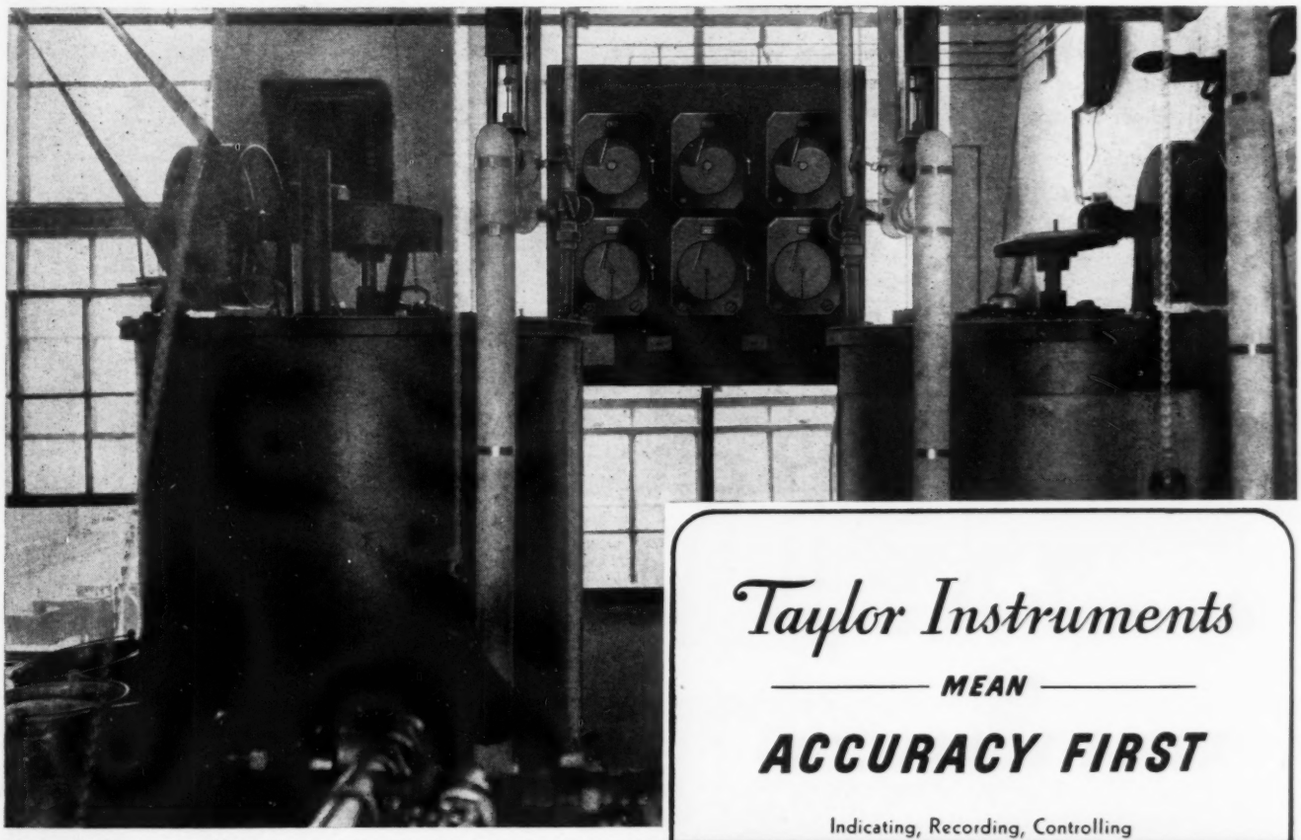


HERE'S a new Taylor development that was practically made to order (Taylor-made, we almost said) for size-cooking control.

Today, with shortages on every hand, this precise operation is more important than ever. With Taylor Fulscope Time Schedule Controllers, once you have the ideal cooking schedule, you can reproduce it *every time,* with automatic control of time and temperature. No over-boiling. No over-flowing. And all you do is load the kettle and push the button!

The Taylor Time Schedule Controller has many features not found in any other instrument. Its dual case construction permits easy accessibility to both control mechanism and cam and trip mechanisms. Its many auxiliary functions make it easy to add extra processing steps. It is available also in double-duty form for control of two related temperatures, pressures, or flows.

Your Taylor Field Engineer can give you the full story. More than that, he can analyze your particular conditions and help you set up exactly the schedule you need for best results. Write to Taylor Instrument Companies, Rochester, N. Y. or Toronto, Canada.



*Taylor Instruments*

MEAN

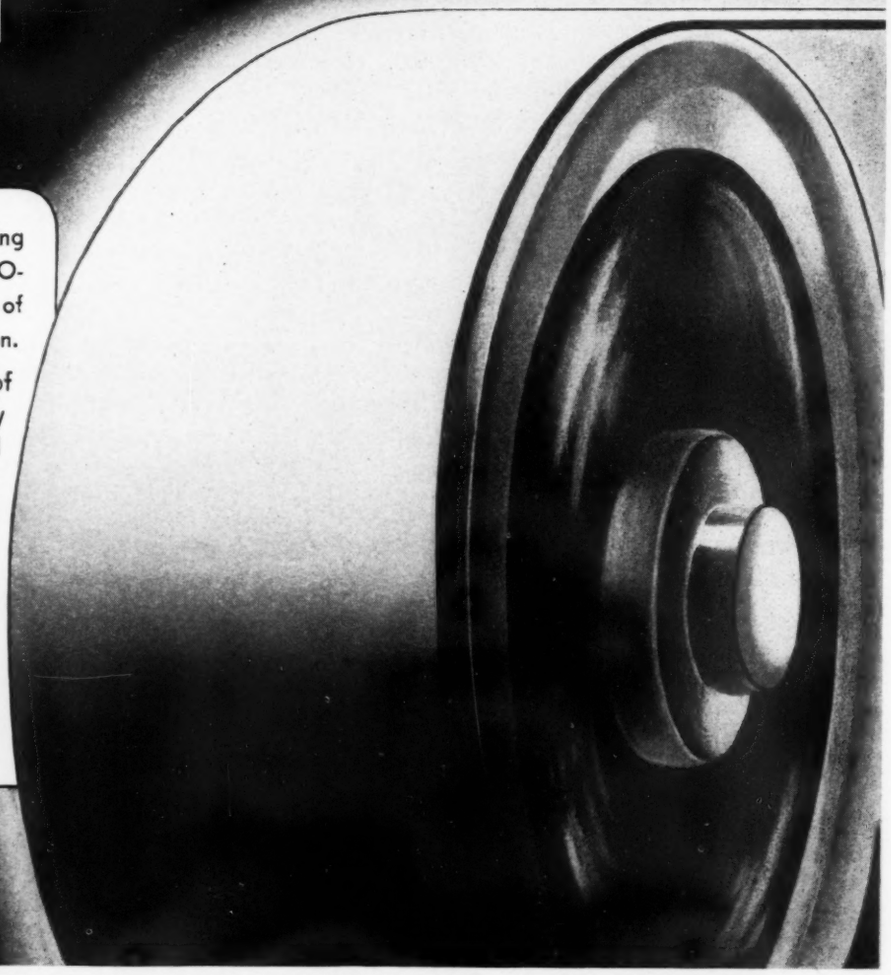
**ACCURACY FIRST**

Indicating, Recording, Controlling

**TEMPERATURE, PRESSURE, HUMIDITY, FLOW AND LIQUID LEVEL**

★ KEEP ON BUYING U. S. WAR BONDS AND STAMPS ★

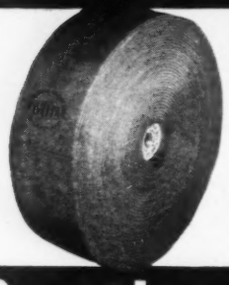
# PIVOTAN BELTING STEPS UP PRODUCTION



● The *plus* wearing, gripping and flexing qualities of PIVOTAN belting assure you of greater sustained production.

PIVOTAN is a new *type* of leather belt — especially tanned, curried and matched to withstand the extreme speed and rapid flexing imposed on short-center drives —or the wear and strain of continuous operation on fixed-center drives.

Maintain peak efficiency on your drives with PIVOTAN leather belting.



# PIVOTAN

## Southern Belting Company - Atlanta

**Manufacturers and Warehouse Distributors**

| Leather Belting | Rubber Belting | V-Belts and Sheaves | Fiber and Metal Pulleys | Rockwood-Southern Pivoted Motor Drives | Westinghouse Motors |
|---|---|---|---|---|---|

# LUPOSEC C. U.

## FOR WATERPROOFING OF ALL MILITARY FABRICS

LUPOSEC C. U. is the adaptation for military purposes of LUPOSEC, Jacques Wolf's well-known *one-bath* repellent. LUPOSEC C. U. combines all the manifold advantages of LUPOSEC, and meets government specifications for waterproofing and mildewproofing of military fabrics. Whether your job is on work clothes, summer dress uniforms, shelter tents, or sleeping bags, LUPOSEC C. U. gives high-efficiency, low-cost, water-repellent finish. LUPOSEC C. U. requires no special equipment; may be applied in either a continuous or a batch type machine.

LUPOSEC C. U. is stable and may be mixed with other finishing compounds such as gelatines, gums, starches, dextrines. It works with equal effectiveness on cotton, wool, silk, cellulose acetates, etc.

LUPOSEC I. N. is a companion-product to LUPOSEC C. U., adjusted to meet government specifications for Army Duck. LUPOSEC I. N. is applied in solvent solutions.

WOLF BRAND PRODUCTS

**JACQUES WOLF & CO.**
*Chemicals* PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.

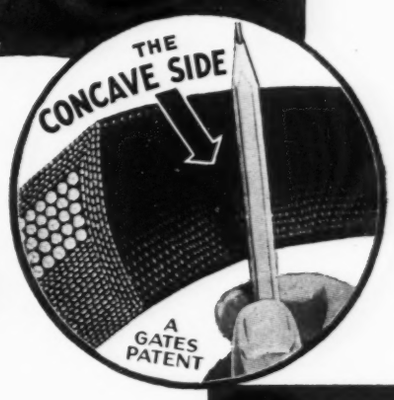
Helps to Conservation by Tubize
A Morale Builder
A touch of Glitter
FOR YOUR OFF-DUTY DRESS
Rayon triumphs in Evergrand, a "clothy" crepe of Tubize Rayon...new, slim skirt with sequin-trimmed "waistcoat." Sizes 12-20...under $25.00. Higbee, Cleveland; Hudson, Detroit; Elder & Johnson, Dayton; Jeleff's, Washington; Young Quinlan, Minneapolis; Nieman Marcus, Dallas. For other stores write Famous dress Co., 2530 Superior Ave., Cleveland, Ohio.
Evident Quality
Where to Buy
Conservation Hints
Fine fabrics are precious these days! To lengthen the life of your wardrobe, heed the advice below for its Care and Upkeep...
• A well-fitted dress looks twice as smart...lasts longer.
• See that your dress fits well.
• Be sure to put shields in at once...and change them frequently; perspiration weakens and discolors fine fabrics.
• Plan a week's wear ahead...give your clothes a chance to hang wrinkle free by alternating their wear.
• Hang your dresses carefully...use shoulder covers and garment bags to keep dresses dust free.
• Prompt treatment of stains is important...don't wait until your clothes are badly soiled before dry cleaning.
• Don't spray perfumes on fabrics...and use deodorants strictly according to directions.
• Make small repairs while they're still small...sew up split seams, fasten loose buttons and snaps.
• Freshen your dresses often—but never in the sun.
• Prevent "iron" marks by pressing on wrong side with a steam iron or over a slightly dampened press cloth...Use a warm—never hot—iron.
• Don't throw away tags or labels...they may contain information useful to you or your dry cleaner.
Advertisements like this in GOOD HOUSEKEEPING, LIFE, VOGUE and MADEMOISELLE are helping American women to save and serve.
A Known Standard
fashioned in TUBIZE certified quality RAYON
Pronounced "Too-bee"
The Tubize Certified Quality label sewn in the seam of your dresses or lingerie not only indicates that the fabric is made of Tubize Rayon but that it has been tested and is certified to be satisfactory in respect to strength, color and cleanability. Tubize Chatillon Corporation, manufacturers of Rayon Yarns and Fabrics, Two Park Avenue, New York City.

How versatile rayon is! Think of the countless rayon fabrics of infinite variety—beautiful, serviceable and economical—that are available to Civilian America. Fabrics woven and knitted of Tubize Rayon hold an important place both in the dress and underwear fields—these fabrics are identified by the Tubize Certified Quality Label; an assurance to merchant and consumer that they have been tested and are certified for color, wear and cleanability—and now Tubize adds an important wartime conservation service by teaching women in national advertising specific ways to make their dresses and lingerie last longer.

**TUBIZE CHATILLON CORPORATION, 2 PARK AVENUE, NEW YORK • *Acetate and Viscose Rayon Yarns and Fabrics***

fashioned in TUBIZE certified quality RAYON

***The Tubize Certified Quality Label on your merchandise adds more than an extra sales stimulus...it adds an assurance to both merchant and consumer that the fabric is serviceable; that it has been tested and is certified for color, wear and cleanability...and this assurance has been constantly advertised both to consumer and the trade for years.***




# Make This Simple Test

## *It Will Show You* A REAL SAVING *in Belt Costs!*

As a V-belt bends, you can actually feel its sides change shape! The top of the belt is under tension and grows narrower (see Figure 1, at right). The bottom is under pressure—therefore it widens. These stresses force a straight-sided V-belt to bulge in the sheave groove (Fig. 1), and this produces uneven wear on the belt sides, resulting in shorter life!

Now look at Figure 2. There you see how the concave side of the Gates Vulco Rope exactly corrects this bulging. It insures a perfect fit in the sheave groove with uniform side-wall wear and, therefore, longer life! It insures that the entire side-wall grips the pulley—heavier loads are carried without slippage—belts are saved and power consumption reduced.

Only belts built by Gates are built with the Concave side, which is a Gates patent.

**What Happens When a V-Belt Bends**

FIG. 1

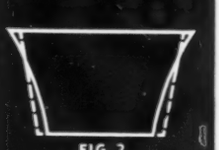


FIG. 2

## THE GATES RUBBER COMPANY

*Engineering Offices and Stocks in All Large Industrial Centers*

# GATES VULCO ROPE DRIVES

**Chicago, Ill.** 549 West Washington
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**New York City** 215-219 Fourth Avenue
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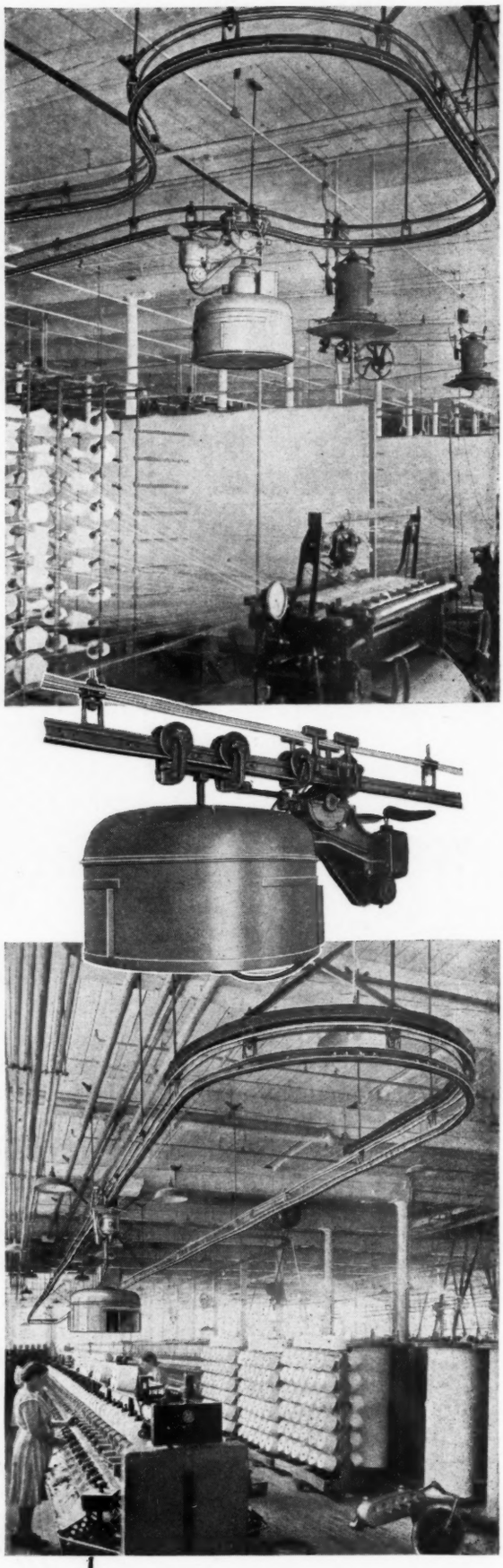

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NOVEMBER, 1942
Volume 106 Number 11

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and L. Meade,
*Assistants*

F. Gordon Cobb,
*Market Counselor*

John C. Cook,
*Business Manager*

W. E. Coogler,
*Production Manager*

*Business Representatives*

ARTHUR C. SHAW, P. O. Box 31, Wellesley Hills, Mass. (Wellesley 3648).

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L. E. ALLEN, 1401 Security Bldg., 189 West Madison St., Chicago, Illinois. (Graceland 6266).

A. E. C. SMITH, 218 Auditorium Bldg., Cleveland, Ohio. (Cherry 7352).

FRANK P. BELL, 1173 Kenmore Ave., Apt. 3, Kenmore, N. Y.

W. A. MCGEE, Box 562, Charlotte, North Carolina. (3-4932).

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ATLANTA, GEORGIA

# COTTON

SERVING THE
## Textile Industries

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# BEFORE THE TAKE-OFF *SINGER* IS ON THE JOB

Before one of the giant Curtiss "Commando" transports can take off, many things must be done. Men and women work day and night with many different tools and materials.

Singer sewing machines play a vital part in building planes, and clothing and equipping men for all branches of the armed forces.

Singer sewing machines formerly available for making hundreds of different things for civilian use are now sewing parachutes, uniforms, tents, gun covers, shoes, powder bags, fur lined helmets, and many, many other articles needed to bring speedy victory to US. And if, like many others, you are having trouble getting Singer sewing machines, remember that Uncle Sam is our first customer, and his needs must be satisfied first.

SINGER

SEWING MACHINE COMPANY
Manufacturing Trade Department
149 Broadway, New York, N. Y.
*Branches in principal cities throughout the world*

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*(Photo courtesy of Curtiss-Wright Corp.)*

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12. Produce more uniform yarn.

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Well prepared, too, were our Textile Industries to supply millions upon millions of yards of cloth and fabrics which pass the Quartermaster's tests for everything from strength of thread to wear, wind, water, cold and sun resistance.

Well prepared, also, were Dayco Tempered Roll Coverings to set entirely new standards for delivering month-after-month, record-breaking performance in the production of more uniform, high-standard yarn. Daycos are engineered and built to take in stride sudden or extreme temperature changes without flattening, distorting or grooving.

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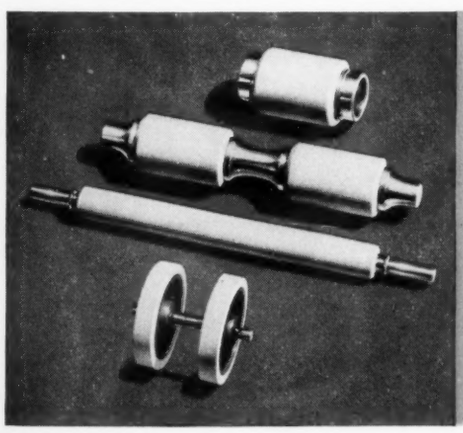

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# SHORTS AND REMNANTS

## Advertising Continues

Many of our readers who follow the textile parade through our advertising as well as our reading pages have been gratified to note the continuous increase in the number of textile suppliers presenting their messages. At the risk of breaking an arm patting ourselves on the back, we'll say that manufacturers are spending more money with us in reaching their textile customers in 1942 than in any of our 44 years of service. Sticking our neck out a bit, we believe that even more advertisers will use these pages in 1943.

There are several reasons for this continued increase in advertising. In the first place, by actual survey, textile readers prefer getting their advertising information through publications (over 3 to 1 preference over direct mail). In the same survey, buyers in textile mills showed a preference for COTTON, 140 total mentions to 90 for the nearest competitive textile paper. Being devoted primarily to furthering efficient mill operation and maintenance, COTTON'S reader interest is a natural one for advertisers.

Also, many textile divisions are running at the highest point in their history, operating 24 hours a day, sometimes seven days a week. Practically all divisions are furnishing necessary uniforms, hosiery, underwear, tents, tarpaulins, parachute and plane cloth, bedding, cartridge belts, work clothing, etc., for our Armed Forces. It is an active market for necessary machinery, equipment and supplies must be maintained for essential war production.

Further, it is a basic industry with a steady civilian demand in normal times, and with the largest number of machines, major plants and employees of any industry in the United States. Manufacturers who are looking at after-the-war markets are keeping their messages in front of this trade, even when their own production is going into planes, tanks and bullets. Our own Government realizes the value of keeping established brand names alive by institutional advertising and reasonable advertising is allowable not only as an operating expense in income tax deductions, but also as a part of this expense on Government contracts.

Many advertisers are taking advantage of this opportunity to devote valuable space to assisting plants in keeping up machinery and equipment, promoting War Bond sales, etc., and the reader will find a greater variety of interest in advertising pages today than ever before.

◆

## Old Timer

"The information that I wrote you about some time ago, 'The Story of Old Timer's Methods of Working and Management', came in today. . . . This is exactly the material I wanted and I assure you that it will be put to good use. Can we reproduce this material for our own use? . . . I have in mind using this material for a text for foremen training and possibly for training section men also."

RAYMOND E. HENDERSON
Superintendent,
Graniteville Co.,
Graniteville, S. C.

## World Premiere

THE 106-page special section in the October issue of "Cotton", devoted to the promotion-research program of The Cotton-Textile Institute and the National Cotton Council, had its premiere at the annual convention of the Institute in New York City on October 22. Special arrangements were made to have copies of the section, as reprinted for distribution to customers of the industry, at the New York meeting, and Dr. Murchison, president of the Institute, announced it in his annual address, and copies were distributed to those in attendance.

Dr. Murchison took this occasion to express appreciation to the entire textile press, mentioning, in addition to "Cotton", the "Textile World", "Textile Bulletin", "American Wool and Cotton Reporter", "Textile Age", and the "Daily News Record" and "Journal of Commerce". He declared that in his judgment no industry was more highly favored with a helpful, constructive, and useful group of publications than those serving the textile industry.

Thank you, Doctor!

## Rayon Processes

"Please advise whether copies of 'Flow Diagram of Principal Rayon Processes' appearing on page 57 of your January, 1940, issue of COTTON are available."

W. H. GOSCH, JR.
Burlington Mills Hosiery Co.
Greensboro, N. C.

◆

## Fiber-Blending

"I have read the articles about blending in the July issue of COTTON and find them very interesting. I believe that it would be beneficial to the industry if more mill technicians were encouraged to discuss in the journals the methods and techniques of processing fibers of all types."

W. F. MACIA
The A. M. Tenney Associates, Inc.,
New York, N. Y.

◆

## Printing—1938

"In the issues of COTTON of March, April, June, August and November, 1938, you printed an excellent series of articles by C. Norris Rabold on Printing. You stated in small type that copies would be available to subscribers as long as the supply lasted."

A. H. GRIMSHAW, F.A.I.C.
North Carolina State College,
Raleigh, N. C.

◆

## For Better Overseers

"I have just read the September issue of COTTON and I particularly like the article 'Looking After the Stragglers'. This is among the most interesting articles I have ever read. Please send me 25 reprints for my second hands and overseers."

TOM E. LAWSON
Supt., 1-A Weave Room,
Riverside & Dan River Cotton Mills, Inc.,
Danville, Va.

---

"I have just read with deep interest an article in the September issue entitled 'Looking After the Stragglers'. This is, in my estimation, one of the best articles I have ever read on this subject, and I am wondering what it would cost to have about 1,000 copies of this article reprinted in pamphlet form to distribute among our organization and to send to some of our friends."

W. H. SUTTENFIELD
Asst. to the Pres.,
American Yarn & Processing Co.,
Mount Holly, N. C.

---

". . . we have found the article 'Looking After the Stragglers' very interesting and am wondering if you can furnish us about 100 reprints of this article. Will appreciate very much your doing this for us as we want to distribute them among some of our help and all second hands . . ."

R. J. JENNINGS
Assistant Superintendent,
Lanett Mill,
West Point Manufacturing Co.,
Lanett, Ala.

(A limited number of reprints of "Looking After the Stragglers", page 75, September, 1942, are available. For better overseers, look this one up and read it again.)

◆

## Long May She Wave

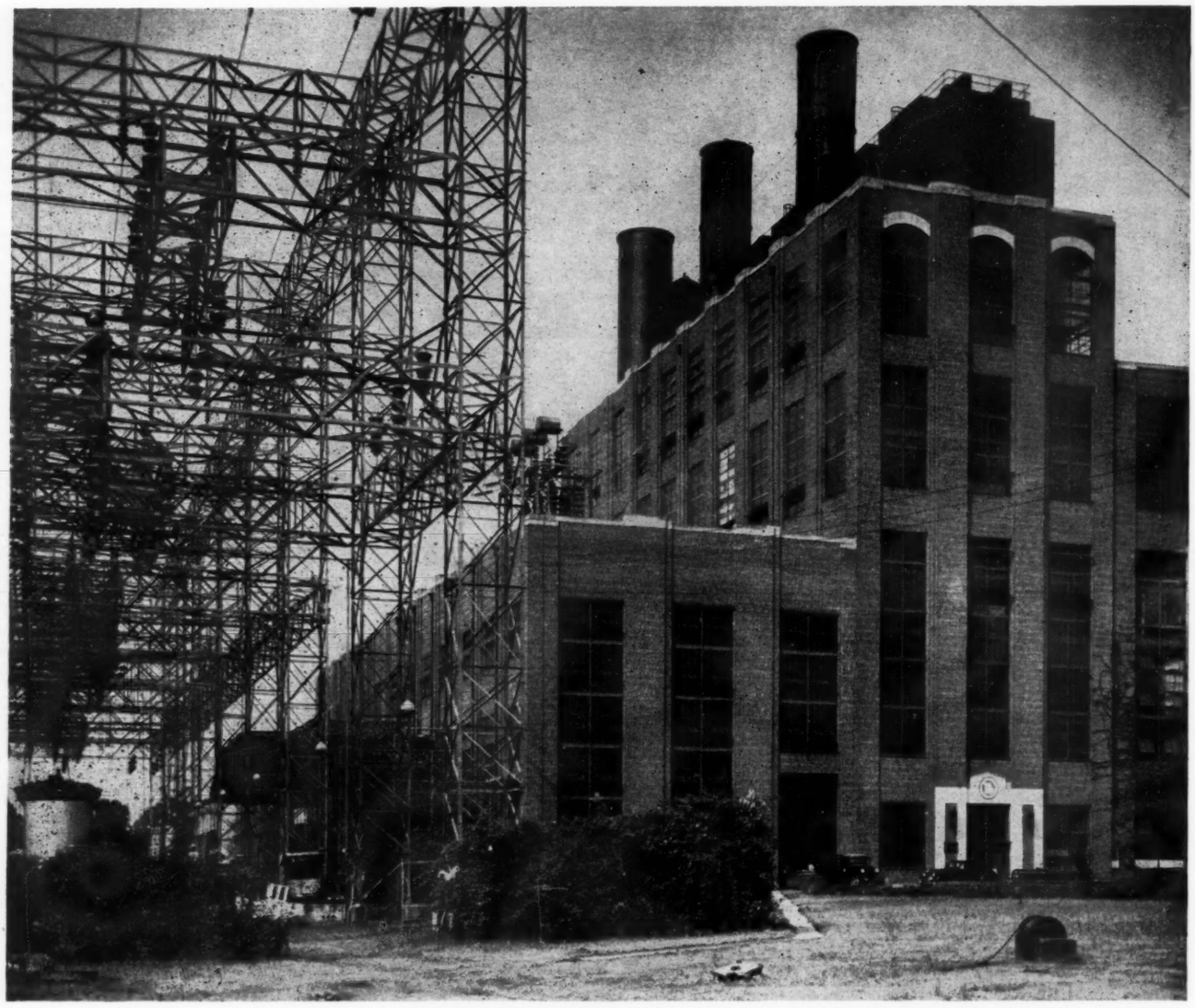
"We wish to compliment you on the beautiful illustration of our flag with some of the early types appearing in the September issue of COTTON, as an inspiration to buy War Bonds. . . . We have had it framed. May we suggest that you have another copy of it in the October issue, together with a short historical account of the eight early flags illustrated?"

O. H. OSENKOP
International Selling Corp.,
New York, N. Y.

(This was the first page of another of those very attractive inserts of The Louis Allis Co., electric motors, Milwaukee, Wisconsin. Other inserts in this present series appeared in August and October and are being continued.)

## Hugh Comer in Action

Look closer, and you'll see this is a man in dinner dress illustrating how his wife inserted a "gusset" in the back of his trousers. This antic was a highlight in the address of Hugh M. Comer, of Avondale Mills, at the testimonial dinner for W. M. McLaurine in New York on October 21. This unretouched photograph is for the benefit of those who could not attend . . . .



# 6,000,000 Men Work Here

This is a photograph of one of Georgia's most vital war industries—Plant Atkinson, our largest electric generating plant.

Plant Atkinson's output of energy is equal to the combined strength of 6,000,000 strong, husky men—each one working 40 hours a week. That's more men than Uncle Sam now has in his entire armed forces—Army, Navy and Marine Corps.

Plant Atkinson is equivalent to 6,000,000 essential war workers. Their strength goes into the running of military camps, training schools, airfields, supply depots and shops. These versatile, tireless workers turn the factory wheels, pump oil through the pipe lines, preserve perishable foods, energize the telegraph, telephone and radio communications systems, illuminate the signal lights that guide aircraft and railroad trains.

This is the miracle of electric power, that it can do the work of an army of men at a time when there is a critical shortage of manpower.

Plant Atkinson, of course, is only one of a number of power plants in Georgia.

## GEORGIA POWER COMPANY

COTTON
SERVING THE
Textile Industries

Vol. 106 November, 1942 No. 11

# Unpleasant Truths

THE SCIENCE of politics is largely based on the important fact that people do not like to hear unpleasant truths. Tell them some beautiful and impossible fairy tale, such as that they can enjoy unlimited prosperity without working, and they will vote for you in droves. Tell them the plain, unvarnished truth, that you can't have what you don't work for, and they will refrain from voting for you so certainly that very few politicians are willing to tell the people the truth when the truth hurts. This tendency on the part of politicians to avoid facing facts and to avoid telling people what the unpleasant facts are, has been, and still is, interfering with the vigorous prosecution of the war. The past three years have offered few seasonable opportunities for handing out a lot of soft soap. These have been times for facing hard, unpleasant truths realistically. For example:

## We Get In The War

Right up until Pearl Harbor there were millions of people and a great many of the members of the Government who kept thinking in terms of keeping out of the war when we were already in it. We were in this war definitely from the day the lease-lend law went into effect. Many of us knew we were in it as soon as the German Army crashed through France, but when we began to furnish munitions and supplies of all sorts to England and Russia, we were in the war certainly, if not officially. After the lease-lend bill became law, there was endless argument about whether we should convoy ships or whether we should deliver lease-lend goods in our own ships, and if so, whether we should arm those ships. There was a great deal of wishful and futile thinking about "keeping out of the war".

The unpleasant truth was that when we began to give aid and comfort to Germany's enemies we were automatically in the war, and it was only a question of time and place for the fighting to start. If the Japs hadn't done us the favor of setting the date, we might still be wishfully wrangling among ourselves about "keeping out of the war", and consequently diminishing our chance of winning it when we finally admitted that we were in it.

## The Great Boondoggle

There are plenty of people in this country who know what modern war implies and who realize that it cannot be conducted merely as a commercial enterprise or a huge WPA project. Yet that has been the spirit of the war so far. In the minds of millions it is a great boondoggle; a huge WPA project with money for everybody. Millions of people are making unheard-of wages and spending lavishly, while we talk vaguely about controlling inflation. Retail sales are setting all-time records. Nearly everybody appears to be prosperous.

The harsh, bitter truth is that war can make few people prosperous, but can and probably will bring down the standard of living below anything we have known for 50 years. In foolishly inflating wages we are automatically insuring the inflation of everything. War cannot be conducted as a commercial enterprise in which the government simply buys the things it wants at inflated prices; modern war is a National Effort, in which every public energy must be co-ordinated for victory, and an effort in which the boondoggling spirit must vanish before there can be any real co-ordination of national energy.

## Inflation

Inflation is the great domestic enemy of every nation in every war; that nation which cannot control it is destroyed by it. It has been growing by leaps and bounds in this country since we first began to prepare for war, and even before we admitted that we would ever get in the war. Inflation is just a fancy term for high prices. When goods are plentiful and money is scarce, then prices are low; but when goods are scarce and money is plentiful, then prices are high. War always makes goods scarce, and foolish Government financial policies can make money plentiful. When a Government hires twice as many people to do a job as are needed, and pays those people two or three times as much as they would otherwise have received for doing the same work, we begin to get inflation. At the present time, this inflation has become very aggravated. The labor unions have been the principal offenders in forcing inflation, and with the assistance of a complaisant Government, they have given it an exceptionally good start. Congress has recently passed some anti-inflation laws and the President has appointed an economic stabilizer, and we are supposed to assume that inflation is under control.

The unpalatable truth is that practically nothing has been done about inflation. There have been some gestures, but little more than gestures. The

Presidential proclamation setting up the supposedly anti-inflationary machinery specifically excepted from the provisions of the order those laws which are at the root of inflation. Control of inflation is practically hopeless so long as the 40-hour law and the accompanying Walsh-Healey Act are in effect. The Director of Economic Stabilization is given control over wages and salaries, but he has no control over earnings, so long as the 40-hour law is effective. The degree of inflation is determined by how much more money there is to spend than there are goods to buy, and not by a man's nominal wages per hour. As the war proceeds and manpower shortages become more acute, there will be more overtime work required, and the time and a half provisions of the 40-hour law will pyramid the pocket money of the people whose hours are increased. Several hundred thousand coal miners have been working 35 hours a week. Several hundred thousand other men in other industries are on approximately a 35-hour week; several million are still nominally on the 40-hour week. Inexorably, hours must be lengthened to meet the demands of the war, and unless the Director of Economic Stabilization has control over these overtime payments he is licked before he starts.

## Manpower

Our first participation in the war was as "the arsenal of Democracy". In theory, we were to supply the armies of our allies. British factories were subject to bombing, ours were not. The Germans had overrun and captured most of Western Russia, where the greatest degree of industrialization had been reached. Both countries needed supplies of all sorts which we were to furnish. We are now training and equipping a very large army of our own, and presumably it is to be used for foreign service. Highly placed officials talk about an army of 10 million men or more. Our resources are supposed to be inexhaustible and we are going to smother our enemies with a flood of war material from the huge industries which have been dedicated to the manufacture of engines of war.

The disagreeable truth is that we have got to reach some very important decisions about the nature of our participation in this war and reach them quickly. We must make our choice between having a big army of our own to supply, or supplying the armies of our allies; we can't do both. Every man taken from industry into the Army or Navy makes it necessary to leave several men to supply his needs as a member of the Armed Forces; thus we automatically diminish our productive capacity while increasing consumptive necessities. It doesn't take long for us to reach the point where it takes everything we can possibly produce to take care of our own forces, with nothing left for our allies, and it doesn't take much longer to reach the point where we can't properly meet our own military requirements. There is no use kidding ourselves into thinking that too big an army is going to do us any good, and until we know much better than we do now just what can be done with our manpower, we can't tell how big an army is too big.

The amount of available productive manpower is not the same as the available numerical manpower. There are hundreds of thousands or perhaps millions of people reveling in new-found prosperity who are not working steadily nor putting in nearly as many hours as they could. The 40-hour law and the Walsh-Healey Law invite a number of slick little tricks to swindle the Government. One of these is commonly termed by cotton mills "double shifting". Under the Walsh-Healey Act a man must be paid overtime if he works more than eight hours in one day, even if he only works one day a week. Employees on complementary shifts can work in collusion to take advantage of this law, and if the man on the night shift conveniently fails to show up, his counterpart on the day shift will get a chance to put in 16 hours and get paid for 20. Then the day shift man lays off and lets the night shift man get 20 hours' pay for 16 hours work. The same trick can be worked even where the Walsh-Healey Act does not apply; one man can work 67 hours one week, lay off the next, and still draw more pay than if he had put in 80 hours straight time. Thus a man who figures his weekly budget requires 40 hours of work is able to earn his quota with less than 40 hours, and consequently with a reduction of the country's available productive manpower. Inflated wages, irrespective of overtime payments, are having the same effect. Men who have been living on a $25.00 a week budget and are now making $75.00 a week are often inclined to lay off frequently. This situation became so acute recently that the Alabama Selective Service Director had to threaten to change the draft classifications of men who laid off without satisfactory excuse for more than 24 hours.

The American people are going to resent vigorously any unnecessary regimentation regarding their work, but there positively must be some control over the nation's productive capacity. This control can probably be exercised more effectively by eliminating excessive wage payments than by arbitrary police methods.

## The Farmer's Problem

Whole towns have shut up business and gone to pick cotton, prunes, or other crops that were about to become a total loss. The farmers are desperately short of labor, and the Farm Bloc in Congress put up a strong fight to give inflation a boost by lifting the price ceilings on farm products, on the theory that the farmer must be able to compete with the Government for labor.

The plain, unvarnished truth is that it doesn't make a particle of difference from the labor standpoint whether the farmer has parity or 110 per cent of parity or 125 per cent of parity. A farmer who has been paying a dollar or two dollars a day for his regular help can't compete with a dollar to two dollars an hour in a shipyard or a munitions plant, regardless of what "parity" may be. The able-bodied farm help has swarmed into the industrial

(*Continued on page* 112.)

# How to Maintain Your Motors to Keep 'Em Running

**By O. F. Vea**
**Motor Division, General Electric Company**

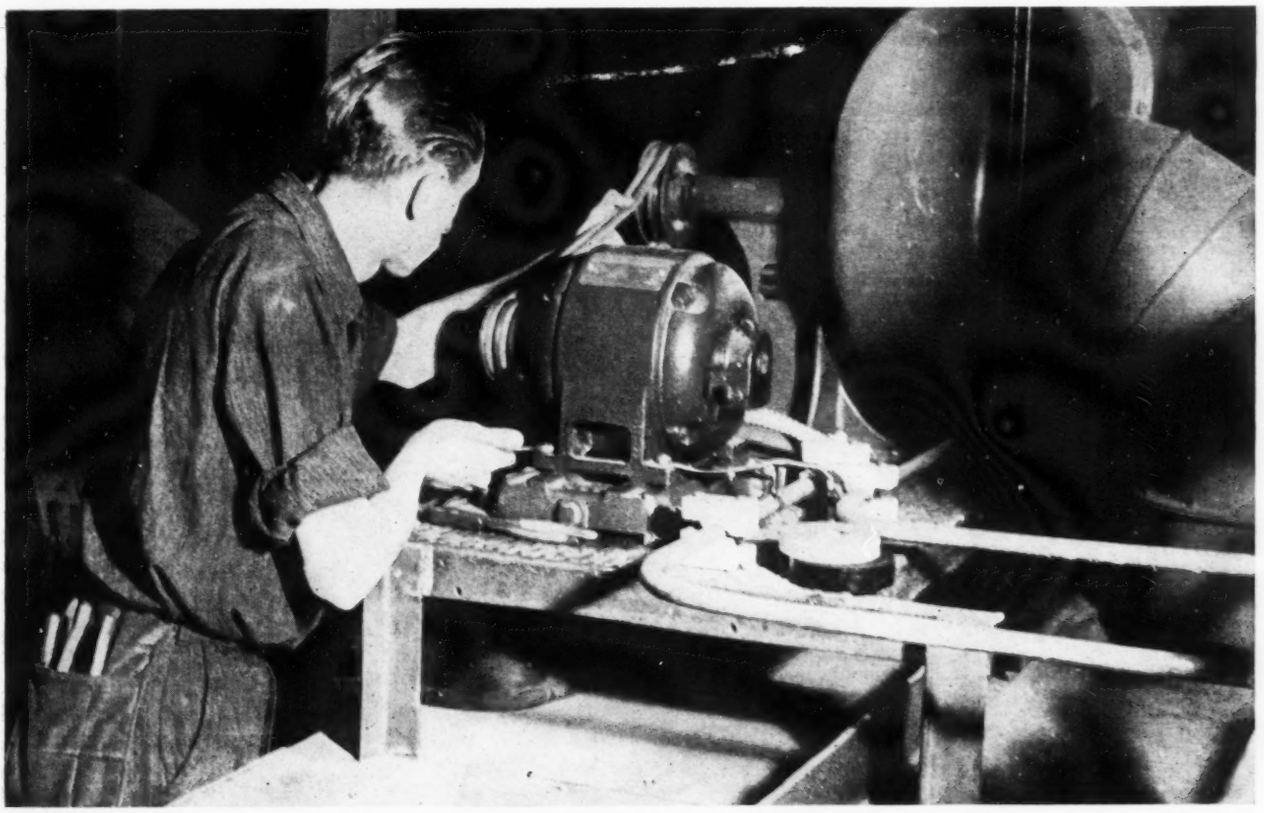
PRESENT-DAY conditions have placed added responsibility on the maintenance man. With our war effort demanding more and more production, it is essential that maintenance programs be intensified to prevent breakdowns, for even the failure of an inconspicuous piece of equipment can cause a considerable disruption in production.

Troubles are bound to occur in the best of electric equipment. However, knowing what to do about them when they do occur will save much precious production time. If the maintenance man is familiar with the causes of such troubles he can often stay one jump ahead of them.

The job of the maintenance man is easier if he has available instruction books and wiring diagrams covering every piece of electric equipment and every circuit for which he has responsibility. Extra parts should always be kept on hand as well as a complete list of spare parts. Maintenance is simplified if the maintenance man makes a practice of becoming thoroughly familiar with the operation of each piece of equipment as it is installed in the plant.

The installation and care of electric motors is a subject of primary importance today. One of the most vital pieces of equipment in any plant, motors have now been put in the hard-to-get classification. Of necessity, therefore, they must be given a periodic inspection and servicing to keep 'em running.

The photographs on this and the two following pages illustrate some of the most important points in a well-organized maintenance program, that will contribute to "Keeping 'em running".



*PROPER installation is important if a motor is to have a long, trouble-free life. The motor should be located in such a way that it is accessible for inspection and repairs. Of course, it is always advisable to install the motor in a place free from adverse conditions unless it is built in a protecting enclosure. It is also important to see that the motor has ample ventilation so that heat losses will be carried away.*

*A standard motor should not be installed where the ambient temperature or normal temperature rise is more than 40 C. The motor should be installed on a solid foundation free from vibration. If it is direct-connected or belted, care should be taken to secure proper alignment, which should permit rotor end-play within reasonable limits.*

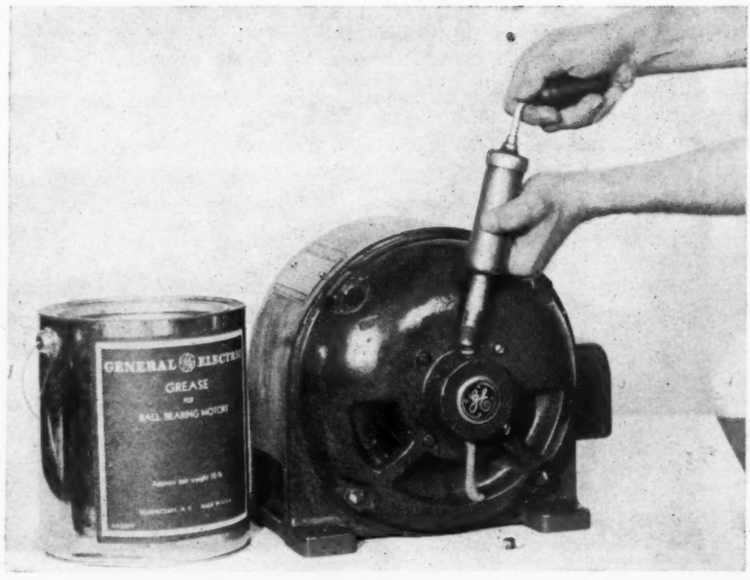
*ALL electrical connections to a motor should be made tightly enough so that the vibration of the equipment will not loosen them. Wires joined in a conduit box should be either twisted together and soldered, or bolted together. These joints should be wrapped first with rubber tape, and then with friction tape.*

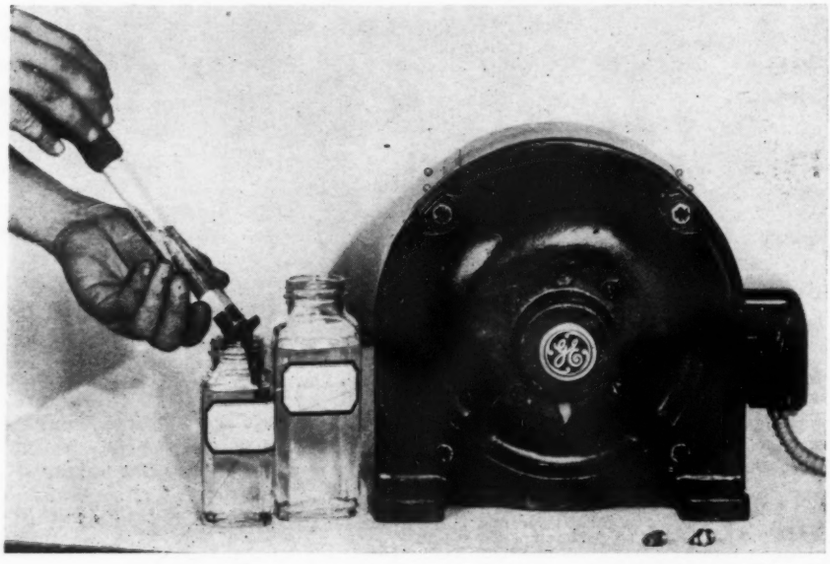
*Wires issuing from a conduit box, especially rubber-covered extension cords, should be held in some way so that there is no strain on the connections themselves. Usually a knot in the wire inside the conduit box, or the use of conduit-box fittings that grip the wire where it leaves the box, are the most convenient ways to obtain this strain relief.*

*THE point has now been reached where the bearings of modern motors, whether sleeve, ball, or roller, require only very infrequent attention. However, oiling and greasing of new motors is quite often entrusted to careless attendants who have been used to lubricating older designs, with housings less tight than on modern machines.*

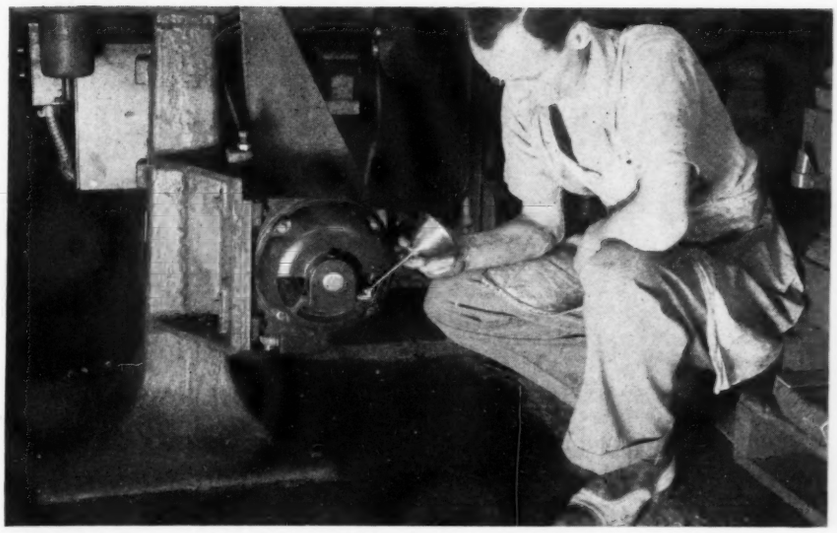
*As a result, oil or grease is copiously and frequently applied to the outside as well as the inside of bearing housings. Some of the excess lubricant is carried into the machine and lodges in the windings, where it catches dirt and thereby hastens ultimate failure.*

*If the proper amount of suitable lubricant is applied before starting, there should be no need to refill the housings for several months, even in dusty places.*



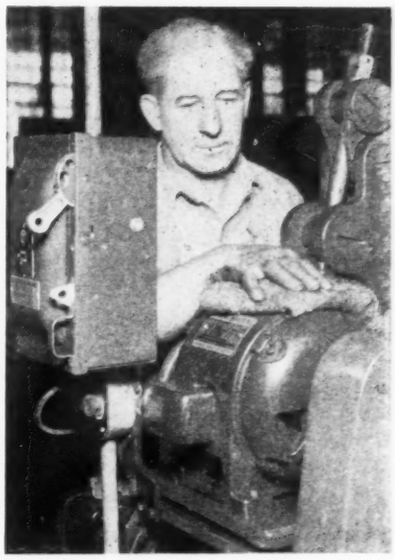
*ALTHOUGH the pressure-relief system of greasing motors tends to purge the bearing housing of used grease, complete cleaning of bearings is required occasionally. The housing of this motor can be flushed with a solvent such as carbon tetrachloride without disassembling the motor.*



*THE oil level in sleeve-bearing housings should be checked periodically wtih the motor stopped. If the motor is equipped with an oil-filler gauge, the gauge should be approximately three-quarters full at all times.*

*If the oil is dirty, drain it off by removing the drain plug, which is usually located in the bottom or side of the bearing housing. Then flush the bearing with clean oil until the outcoming oil is clean.*

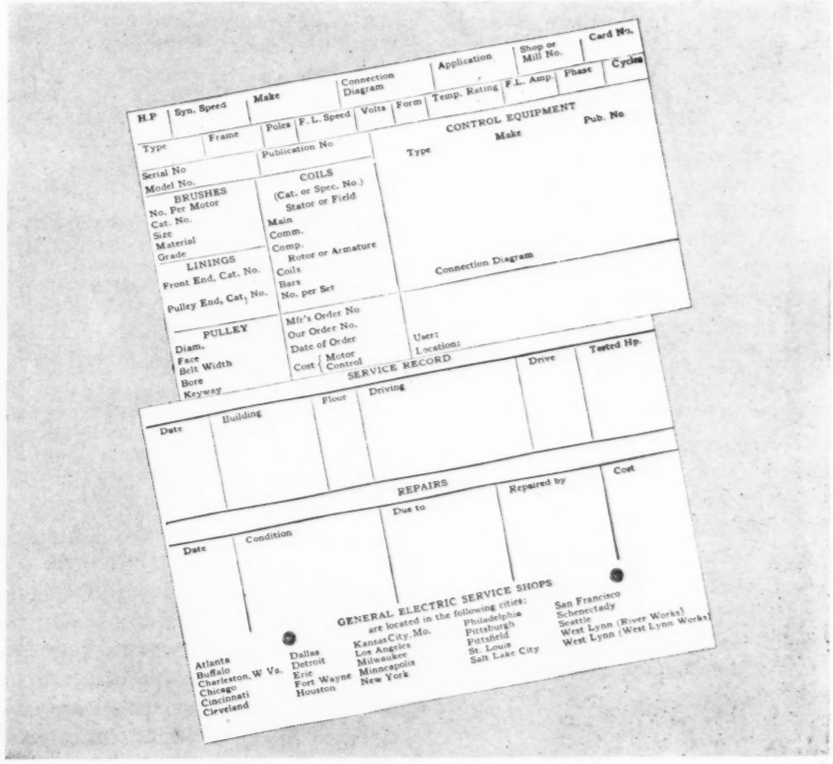
*In fractional-horsepower motors, there may be no means of checking oil level, as all the oil may be held in the waste packing. In such cases, a good general rule for normal motor service is to add 30 to 70 drops of oil at the end of the first year and to re-oil at the end of each subsequent 1,000 hours of motor operation.*



*A SYSTEMATIC wiping of motors is necessary to insure best operation. While some machines are installed where dust, dirt, and moisture are not present, most motors are located where some sort of dirt accumulates on the outside. This motor is arranged so that the nameplate can be quickly and easily read.*

◆ ◆

*CHECK motor foot bolts and end-shield bolts every six months to make sure they are securely fastened. Here is a good example of how not to do this—use a wrench, not pliers. Also observe safety rules.*




*THE competent maintenance man will have a record card for every motor in the plant. All repair work, with its cost, and every inspection, can be entered on the record. In this way, excessive amounts of attention or expense will show up and the causes can be determined and corrected.*

*Inspection records will also serve as a guide to tell when motors should be replaced because of the high cost to keep them in operating condition. Misapplications, poor drive engineering, and the like, will also be disclosed.*

# Some Facts to Consider

**By W. M. McLaurine**

Secretary-Treasurer, American Cotton Manufacturers Association

IN ALL FORMS of human society from the organization of the family or clan through to national life, there has been a struggle for power. The present world conflict has lurking in the background an egomania larger than any that has ever existed. There is an exulting glamour in power along with the social, political and economic security that it gives to its possessor.

In our present evolutionary status, it seems inevitable that we must have different groups in our social, political and economic society. This is not strange nor unusual. The fact that these groups are constantly struggling among themselves for power is not unusual or bad in itself. The fact that these groups are struggling for their own selfish advantage and very likely at a disadvantage to the other groups is distinctly bad.

There is also a rivalry among the groups as to which is the most important, the most intellectual, the most capable of governing the other groups. There are different philosophies dominating the groups and therefore a clash of ideas as to what is right and what is wrong —what is fair and what is foul— what is best for society as a whole.

The egocentric thinking of one group is so pronounced that it seems to arrogate to itself a rather holy attitude and adopts the slogan, "What hurts business, hurts you." The slogan may or may not be true, but the slogan, "What hurts you, hurts business," is true.

Another group of society says that they are the great producers of raw materials and therefore they are the backbone of society and that they must receive preferential treatment, even 110 per cent preferential treatment.

Then we have a great group of fabricators and manipulators of machines and materials who say that they are the great converters of our materials into serviceable products. Without their labor and skill, nothing that is would be, therefore, they should be the special proteges of government and in their political and economic life they should be free lances.

Finally comes the great consumer group which can prove conclusively that it pays all of the taxes and revenues and costs of raw materials, labor costs and everything incident to making the product ready for sale and then they pay a pyramided profit to all who have touched it. They want special favors.

International traders, industrialists and bankers constitute another group which clashes with the domestic traders, industrialists and bankers.

Interwoven with all of these groups are progressives and conservatives, Republicans and Democrats, pro-administrationists and anti-administrationists, seekers for a complete new form of government and strict constitutionalists, churned into a madhouse by too many self-seeking politicians.

When any one reads these statements and is compelled to acknowledge that they are facts, then there naturally follows the idea that there must be reasons for these groups and for their conflicts. These ideologies have not sprung up from nowhere and appeared spontaneously. As most workers and industrialists think, there are no other important conflicts except the industrial conflicts. Those mentioned are by no means all, and right now, of recent origin, even within our own nation we see indications of inter-sectional conflicts, inter-racial disturbances and other trends in conflicting interests.

No one group or conflicting groups must feel that they and their problems are the only impelling ones that need attention and whose adjustment would bring lasting peace and progress. It is true that certain groups conflict with some groups more violently than they do with others, but it is also true that all groups are interrelated and have inter-group relations and influences.

We may indicate some general causes of these conflicts. Change is the principal one. The scientific method and technology have been the active force in producing the revolutionary transformations society is undergoing. There have been other contributing factors which have influenced these factors so that they have not been able to operate positively and directly. These lesser factors preying upon the scientific movement have added to the conflict that underlies the confusions and uncertainties of the present scene.

The conflict is between institutions and habits originating in the pre-scientific and pre-technological age and the new forces generated by science and technology.

For a long period of time progress was slow, hence the understanding and adoption of ideas and changes were easy to effect, but with the sweep of the scientific movement, the tempo became too great for society to grasp and adopt, hence the breakdown into groups, each struggling for what it considers its rights and privileges.

Thus the social structure has become divided and groups associate themselves into classes and outline

**THIS begins a new series in "Cotton" by Mr. McLaurine. In the past 12 issues, we have presented a serial discussion by him, directed mainly to plant executives and supervision, as to various phases of public and industrial relations.**

**The accompanying article is the first in a series intended to provide, for the operating executive, information which it is hoped will be useful for transmitting to the employees of the plant.**

their policies and plans and set up means of compelling their execution. The means of accomplishing their ends are intelligence, force, violence and law—either one or a theoretical combination of them.

Mankind, in its pioneering spirit of conquering continents, wild lands and wildernesses, wild men and seemingly insurmountable obstacles, has been trained in the use of force—even violence—so much so that he has within his being and tradition the idea that force and violence are the only means available in attaining that which is difficult. They have overlooked the fact that with the influx of science, there has come or should have come a renaissance in intelligence and morality. Intelligence and morality are slower in reaching the end than force and violence, but they generally make for further understanding and co-operation while force and violence sow the seeds of discord for further force and violence.

### Force and Violence

Just as the class conflict is between old institutions and habits and new institutions and habits, so has the method of settling them been retained in the use of force and violence.

The conflict of World War I and its settlement is an outstanding example of old traditions conflicting with the new. The peace treaty settling or attempting to settle World War I is a sample of the foolishness of trying to settle injustices by force and coercion. There was rest for a little while and soon the seeds of discord flashed into World War II. There was a lack of intelligence and morality in settling World War I. There was too much punitive philosophy produced by hate and fear and revenge for the great causal factors to be picked up and handled intelligently.

I use this example, because the facts are so evident. The nation is but an enlargement of the group or the individual. To me, it is symbolic of our social and industrial and political problems. War and violence never settle anything. Reason and righteousness and intelligence and tolerance are some of the constructive factors that must sit at the table of differences in order that fairness may be found. These are some of the component parts of democracy and christianity.

It seems so inconsistent to look across the world and shudder at the terrible conflict of men and nations and then look within our own nation and see our own groups practicing the same philosophy in a bloodless way but with the same avenging spirit. And yet, the writer is no pacifist. There is a use for force in this world. When force loses its control, as it is likely to do, it results in violence. The force that is indicated in this discussion is not a selfish force which has for its purpose self-aggrandizement and superiority of power for the person, party, group or nation.

It is better understood when we designate it as a constructive force —a force that benefits not only the user but the one against whom it is used. This nation's entrance into World War I was thoroughly justified by the principle of "making the world safe for democracy." Our entrance into World War II is justified by the Atlantic Charter. In both cases, this nation was and is using force unselfishly, not only for its own protection but for the protection of all of the nations of the world.

Again, this situation is so evident that it is not difficult to interpret what we mean by constructive force and how and when it should be used. Again, it is used as a last resort. Force may be a legislative bloc or a law.

This is a general story to orient the mind of the reader into the breadth of our social conflicts, their causes and the futility of the means now being employed in their settlement. This is supposed to be an age of advancement in the development of intelligence and morality. The force of argument and reason, the force of fairness and loyalty and tolerance are supposed to act in the place of brute force and violence.

The greed and hate and fear and selfishness exhibited by the Axis forces in their cruelties, should impress all groups of our national society of the importance of unity, the importance of our having a common understanding of all our complex problems. In all that we do or think, we should always ask two questions, "Will this help win the war?" and "Will our group plans and purposes be of advantage only to us?"

It is not enough for each group to struggle for its own preservation. It could do this at the expense of other groups. In struggling for its own preservation, it must make its contribution in preserving the safety and well-being of all other constructive groups in our national society.

It is no exaggeration to say that the measure of civilization is the degree to which the method of co-operative intelligence replaces the method of brute conflict.

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### "Labor Piracy"

**The practice of "stealing" skilled help from other companies is beginning to show itself in some industries and in some localities. Undoubtedly, the pressure to get out production to meet defense requirements makes the temptation great to hire skilled men away from other companies.**

Labor piracy, however, can become a very serious obstacle in the way of carrying out our national defense program, if, instead of training its own men, a company "steals" men from somewhere else.

While this labor piracy is going on, the total skilled labor supply is remaining stationary. No new men are being trained. We must realize that the total supply of skilled labor at present is insufficient to meet total demands. Therefore, the sooner everyone recognizes the necessity of training men for his own needs, the sooner we will make progress in meeting national defense needs.

Supervisors everywhere must recognize that ready-made men cannot be picked up as needed. Each shop must train its own. Each foreman must be an instructor.—*"Management Information", Elliott Service Co., Inc.*

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### Teaching Women Their First Jobs

It is necessary to exercise great care in teaching her first job to a woman without previous industrial experience.

Here are some pointers to guide you:

1. Be sure to start your instructions at her level of understanding.
2. Avoid use of shop terms with which she is probably unfamiliar.
3. Be very patient.
4. Be clear and explicit in your instructions.
5. Be considerate and kindly.
6. Be sympathetic.
7. Praise whenever possible.

With due consideration for these pointers, follow the usual basic steps so fundamental in teaching a job, which are: (1) *tell* the learner, (2) *show* her, (3) *test* her to be sure she understands, (4) *follow up* closely to be sure she follows the instructions.—*"Management Information", Elliott Service Co., Inc.*

# MODERN RAYON FINISHING

**Article 7** **By Kenneth H. Barnard and Arthur R. Wachter**

**THIS INSTALLMENT concludes the seven-part series by these authors. It deals with modern finishes, the use of resins, special finishes for special purposes, and the subject of costs. The previous sections have covered rayon grey goods, the plant and equipment to be used, chemicals and other materials, and a detailed discussion of the processing of typical lines including cuprammonium sheers, pigment crepes, men's suitings and shirtings, and women's wear . . . . . .**

### Special Finishes

1. *Anti-Crease.* The rapid rise of rayon, especially that of spun rayon, has resulted in new demands and requests from consumers which were not even envisaged before our textile horizon had been broadened by the introduction of synthetic fibers. For instance, cotton is stronger wet than dry, but the ordinary rayon may lose half its strength under similar wet conditions. Wool yarns cling to each other and are easily felted and fulled, but a low count rayon construction of filament yarns will slip and fray with the greatest of ease. Rayons tend to stretch more and recover less than the natural fibers and the woven cloth shrinks easily and creases badly.

Luckily, with the growth of synthetic fibers, we have witnessed the corresponding growth of synthetic finishes which supplement rayon at the very point where it shows weakness. We refer first to the Tootal Anti-Crease Process, (English Patent No. 291,473-4; American Patent No. 1,734,516) which was previously mentioned in this series under our discussion of chemicals. The use of urea formaldehyde resin, to give rayon something of the spring and resiliency of the natural fibers, was an outstanding development and this constitutes one of the major advances in textile finishing. It not only gave the cloth a lively hand, but it produced a fuller and heavier feel due to an actual increase in weight of from 5 to 15 per cent. Furthermore, it doubled the wet strength of rayon cloth, reduced the slippage and fraying, and in many cases, prevented excessive stretching and shrinkage. On top of all these advantages was the unique property of permanence; that is, a finish that withstands washing and dry cleaning.

These things we take as a matter of course today—forgetting that in the past 200 years, during which there has been little change in finishing cotton, nothing we put in the finish except mercerization would remain in the cotton cloth after the first trip of the garment to the washtub. To many a consumer today, this effect of permanency of finish is a priceless ingredient without which all the other claims would fall into the dust.

To be sure, the Tootal process was designed originally for cotton and does a remarkable job there, particularly on hard twisted voiles and lawns, but today its future is bound up with rayon first, as indicated, because it strengthens rayon when rayon needs strengthening most, and secondly, because in this country cottons are a low cost, big volume, competitive business and cannot stand the increased costs which the rayons are able to absorb. While the Tootal process is particularly applicable to viscose cuprammonium fibers, it can be used successfully on acetate blends up to 25 per cent acetate. Above that it tends to stiffen it. In spun rayon fabrics, it gives new life and sparkle to staple yarns and makes them feel and look more like wool than some of the real rayon and wool mixes themselves.

Some finishers have been tempted to reduce the amount of urea formaldehyde with the idea of getting a certain improvement in hand, with somewhat reduced shrinkage and a partial stabilization of the yarns without mentioning any added resiliency. This cut their costs both because less resin was used and because the royalty of 1¼ cents per yard for anti-creasing the rayon fabric was avoided.

From a legal viewpoint, such a procedure constitutes an infringement of the Tootal patent, if a penetrative type of resin is employed and if any added resiliency is imparted by the treatment. While the proof of whether or not the urea resin lies substantially within the fiber and not on the surface is a difficult job for even the most skillful microscopist, a test for resiliency on the other hand is very easy. Swatches of the fabric, 1x3 centimeters, are cut and folded in the middle and a one-pound weight placed on them for 15 minutes. Then the creased samples are hung up on a horizontal pin and the distance between the bottom edges measured with a rule. If this distance exceeds the distance of a similar test made on the same cloth which has had the resin removed by treatment with .5 per cent hydrochloric acid at 160 degrees F. for a half hour, it indicates the resin has imparted resiliency to the fabric and, therefore, comes within the Tootal patent claim. The mere fact that no claim or adver-

The six previous installments in this series appeared in the April, May, June, August, September and October 1942 issues of COTTON. We cannot promise to supply copies of all of them, but so long as clippings are available, they will be furnished upon request.—THE EDITOR.

tisement was made for resiliency does not relieve the finisher of damage claims, although it holds that if the added resin improves the resiliency, the finisher is liable for infringement judgments.

Tootal has still further increased his legal advantages by licensing his processors to the use of his registered trade name "Tebellized Finish". Such a licensee must agree not to ship any goods under this label which fail to pass certain requirements for resilience, wear resistance, tensile strength and tearing resistance, absence of free formaldehyde and minimum loss in weight on washing. By thus putting a hallmark of quality on fabrics bearing their name, they prevent cut-throat competition through skimping on the amount of resin used. By establishing standards of performance, they build up considerable good will and faith in their product.

The chemical requirements of freedom from formaldehyde and minimum loss of weight in washing have another aspect. There have been complaints of skin diseases or dermatitis from the use of resins on textiles. Some of these are authentic and in a few cases were traced to the presence of free formaldehyde. Other complaints are merely a racket fostered by the spineless attitude of manufacturers who pay a customer's claim as the easiest way out and then turn around and try to collect from their chemical supplier. The doctors tell us that there is nothing which may not cause dermatitis to some individual with a super-sensitive skin. In fact, the well known starches and sulphonated oils which have been used for years in cotton finishing are now known to be guilty of causing dermatitis occasionally. A large amount of research work on this problem has been done by various chemical companies and much co-operative data have been gathered by trade associations such as the National Retail Dry Goods Association, the American Society for Testing Materials and the American Association of Textile Chemists and Colorists. Of course, the government has been following this problem very closely, and Dr. Louis Schwartz of the Department of Public Health in Washington has been instrumental in warning against the danger of dermatitis and advising on the proper procedure of patch testing for it. Unfortunately, one individual test means nothing, as it requires tests on 250 to 500 different people to really prove whether or not a certain chemical is dangerous. Of course, this means that only the largest companies can afford to make such tests unless some sort of central and co-operative laboratory were established to do this work for all concerned. It is obvious that some such reliable and unbiased and authoritative sources could test a new finishing material and that their report could at one and the same time satisfy the chemical company who made it, the finisher who applied it and the department store or consumer who eventually bought it. As it is now, no one along the chain will guarantee anything, that is to the extent of paying any damage claims that arise.

The other chemical test—that of loss of weight on washing—is to determine whether or not the resin was properly fixed by baking. Here again some manufacturers have tried to cut corners by merely drying the resin-treated goods and failing to bake them. Of course, this leaves the resin partially soluble which is bad, but what is worse is that the lack of proper baking and the presence of unfixed resins is the major cause of odors and the smell that one gets from a resin gone bad is even more powerful than an overripe fish.

### Non-Slip and Shrinkage Control

Closely related to the anti-crease finishes just described are various urea resin treatments designed to prevent slippage and fraying on low count rayon taffetas and to control the shrinkage characteristics of various rayon constructions, more particularly the spun rayon mixes used for men's shirts and slacks.

Some form of urea formaldehyde resin is the popular choice. One of the first to patent the idea was Borghetty of the Aspinook Company—Patent No. 2,050,156, issued August 4, 1936 — who claimed in contrast to the Tootal patent, that he got no penetration and merely applied the resin where the threads intersected. These were stuck together, hence slippage was reduced. The culmination of this slippage defect probably occurs in women's hosiery and the familiar complaint "There goes another run and another pair of stockings ruined" has been heard from one end of our land to the other. To prevent runs, one of the best resins is one completely polymerized—that is, taken past the water soluble stage and sold in emulsion form by dissolving it in an organic solvent, which can then be dispersed in water. Of course, such a resin requires no further curing, since it was cured when made and therefore, the stockings are merely treated and dried. For piece goods, nearly everything in the urea formaldehyde resin line has been used from the monomers through the various modified clear water soluble resin solutions to the completely polymerized resin just discussed for treating stockings. Of course, the question of what hand is desired has a good deal to do with the choice and peculiarly enough, some of the hardest resins give the softest finishes.

Another approach to shrinkage control which has been used with some success on cotton and which may find application on rayon is the partial dissolving of the cellulose, thus fusing the threads at the interstices and actually bonding them together. This can be done with cuprammonium solutions or with a quarternary ammonium compound and is particularly attractive on sheer, low count goods such as voiles, lawns, etc., which take a crisp finish, as this incipient fusion stiffens the finish. Naturally, some skill is required in doing this, as it is possible to wind up with a gummy mass of semi-dissolved cellulose instead of cloth, if the process is carried a bit too far.

For spun rayons which in some cases have a very high shrinkage, it has been found good practice to treat with a urea resin which

brings the shrinkage down to 3 or 4 per cent, providing the goods are framed to the proper width before setting the resin—and then Sanforize them to produce a final shrinkage of under 1 per cent. This double treatment is expensive, but it is general practice among the better finishers of this class of goods. Sanforizing alone will not produce figures under 1 per cent and neither will the resin treatment alone, but the combination does the trick. With the increasing demand for fully shrunk goods and the increase in the use of spun rayons for men's wear subject to laundering, this combination process is likely to become even more popular. There is of course, another process bearing a well known name in shrunk finishes, but our experience with it has been that it tends to produce a harsh finish, which is entirely unsuitable for the soft, woolly characteristics desired on spun mixes.

### Water-Repellent Finishes

For a rayon taffeta, to replace silk on umbrellas, a one-bath wax emulsion process may be used, but of the dozens on the market, we know of only one that is really satisfactory for this particular purpose. Of course, any of the wax emulsion types are exceedingly transient when washed in a laundry. One chemical company makes this apparent defect a virtue by soliciting the laundry trade with the suggestion that the laundry replace the waterproofing treatment as a regular part of their service to their customers, naturally at an increase in price.

For those who are looking for a water-repellent treatment that is really resistant to washing or dry cleaning, there has been one process developed in England and brought to this country in a slightly modified form. For permanency, this is excellent! In fact, it is so permanent that if the unfortunate finisher makes a slip on the shade and applies this treatment, it is practically impossible to remove it by any stripping operation. From his standpoint, a process can be too permanent at times. Recently, another large chemical house has produced a different water-repellent treatment just as permanent and said to actually strengthen the goods upon which it is used. At any rate, it has no softening action which may be desirable or may not be, depending on the ideas of the man who buys the goods. Either method of permanently water-repelling the goods is more expensive than the ordinary wax emulsion types which have no permanency to either washing or dry cleaning.

### Fire-Proofing

Although rayon has come a long ways from the early days when dresses were made of nitro-cellulose, even its best friends today would not claim it is as slow to catch fire as wool or silk. There have been some deaths from women's dresses catching fire from a chance spark from an open fire, carelessness with a cigarette, and while a few manufacturers feature fire retardant finishes, such finishes are available should the demand arise. Of course, the earlier methods called for ammonium salts, borax, phosphates, etc., but these leave the goods harsh and require large amounts of salts to be effective. The use of glycol phosphates were an improvement on this and a more recent advance was the use of sulfamic acid or its derivatives. It is possible to combine these with a urea resin to achieve some degree of permanence to washing, which is an added virtue not previously attained.

### Hygienic Finishes

The idea of adding a bactericidal agent to hospital sheets, diapers, underclothes and all sorts of intimate garments has been one that the advertising agents found difficult to resist. Of course, as a people, we Americans go for that sort of thing. Witness our tooth paste "ads", our soaps and cosmetics and gargles whose sales have been pyramided by what an honest physician would describe as ballyhoo. Advertising campaigns for textile specialties have been started in a similar manner and while many of the special chemicals recommended had merit in themselves, their effect was pretty transitory and few of them withstood washing. Those which really did kill bacteria and not merely form a sterile spot when applied, were often dangerous from a dermatitis standpoint. This is particularly true of mildew preventives where copper salts such as the naphthanates are employed or a mixture of this with fluorides. Of course, these are designed to be applied to tarpaulins, ducks, sandbags, etc. that do not normally come in contact with human skin and are perfectly O. K., but it is difficult to find a substance that is toxic to bacteria and not harmful to a sensitive skin.

Recently, however, such a material has been found which is very effective as a bactericide and which attaches itself to the fiber in much the same manner as a dyestuff. In fact, it might be called a colorless dyestuff, as it is water-white, non-toxic, and with no odor or effect on the hand of the cloth so treated. This latter point is not surprising since its bactericidal action takes place in dilutions of one to ten thousand which is far too low to be felt by the hand. The most surprising thing about this new finish is its permanency to washing. When applied to nylon, for instance, it still retains a large part of its original strength and ability to kill germs after 600 washings in boiling soap. Figures almost as startling have been authenticated by several laboratories on cotton and wool. As it attacks both vegetable organisms like fungi and animal organisms such as the bacteria, its field of usefulness is exceedingly broad and its development which is being fostered on a strictly scientific basis, is sure to meet extensive markets.

### Costs

With prices being frozen on more and more finished goods, it behooves every rayon finisher to watch his costs like a cat, in order to be sure where he is making a profit—or one might even add, if he is making a profit. The wide margin which used to make this business so attractive has been whittled down to rock bot-

tom and the current drive by pressure groups of consumers who want everything labeled "A", "B", "C", etc., if enacted, will inevitably lead to further price wars without any labeling whatsoever.

One of the best cost systems for textile processing is that introduced by Gantt some years ago, in which standard costs are established for each process center —i.e.,—for each productive unit such as a calendar, tenter frame, winder, etc., these standards being the entire cost for labor, material and overhead per yard of goods processed through this machine. This figure is found by taking the average monthly or yearly production of any such production unit and dividing it into the total cost of operating the machine. This total cost includes rent, taxes, depreciation, interest, insurance, supervision, and all the other usual overhead items, plus the labor cost necessary for operating and servicing the machines, including power, light and steam, plus the cost of materials. Naturally, for many machines—for example—a dye padder, the cost of dyestuffs or materials will be a very appreciable part of the total and will vary with the depth of shade, etc., so that this item may be a separate variable one, but the fundamental idea is to combine all costs into one unit cost per yard, so that the total cost of running a yard of goods through the plant is merely the sum of the unit cost of each machine through which the cloth travels. Naturally such costs will depend on whether a machine is running full time, part time, or overtime, but a running check is kept on these unit costs each month by multiplying the yards handled by the above standard costs and then comparing them with the actual expenditures for the same period. If the two figures don't agree, a corrected standard must be figured out for the machine in question, or an explanation found for those particular costs which are out of line. This system, therefore, at once spot-lights the particular unit which should be brought to the management's attention promptly and leads to their immediate correction.

Another advantage of this system is that it permits quick, accurate estimates on new work, thus permitting the sales department to take new orders with assurance. All one needs to know is the weight of the cloth and its routing through the plant. Merely adding up the standard cost per yard for each process center, plus any material charges, gives an accurate picture of what can be done, and this figure, plus the selling cost, represents the total cost of the new fabric. Of course, the question of working loss or gain must be figured in—particularly with a cotton crepe, for example, in which 100 yards of grey cloth may result in only 80 yards of finished plissed goods due to the shrinkage. Among textile people costs are figured in points (hundredth of a cent per yard) and it is no secret that many mills have found that points per yard were not too large a unit to figure their profit.

One of the essentials of this cost system is proper routing, and this in turn leads to a system for instantaneous location of any lots processed through the plant. To do this each lot is tagged at both the head and tail end with a large label showing the usual data on order number, yards, style, construction, etc. with the routing indicated through the various departments. Now attached to this same card are stubs, one for each department or room, also with the order number of the individual lot. As soon as an overseer finishes a lot, he tears off his stub corresponding to his room and sends it down to the main office after stamping it on his time clock. Thus, by filing these by customer's order number, a girl in the main office can immediately tell any customer just where his goods are located at the moment, and by consulting a route ticket, predict accurately when they will be finished and shipped. Furthermore, each overseer can be held responsible for them until the stub comes down showing that he is finished with this particular lot. Finishing cloth is a complicated business at best, but if a finisher has the unit costs at his finger tips and can give a customer accurate delivery promises, he at least knows what he is doing at all times and just where he stands.

This now concludes this series of seven articles on rayon finishing. In it we have tried to explain in full and practical detail how rayons are handled in a modern finishing plant, but after all is said and done, the point in which the majority of people are interested is what satisfaction, what service, what requirements these goods fulfill to Mr. and Mrs. Average Consumer. He or she can never understand the complicated balancing of factors that go into the dresses, fabrics and clothing which are bought. But he can read and if the garment bears a factual label which in plain English indicates what serviceability a customer may expect, there is little or no excuse for dissatisfaction, rejections and returns. Any fraud will be taken care of by the standards of Fair Trade Practice, but there is not much chance of fraud since the label is practically a guarantee of quality and any deviation from the truth soon acts like a boomerang on the manufacturer's sales. Of course, the question of what to put in the label is still a controversial subject, but there is no doubt that the use of proper labels is a coming trend which will eventually lift rayon fabrics to new heights of popularity, quality and consumer satisfaction.

### Rayon Ropes for Power Seals

Ropes made of rayon are functioning as mechanical packing material to seal against the entrance or escape of water, brine, oil and other fluids in hydraulic shears, punches and presses, according to the duPont company's rayon department, which developed the special form of rayon for this application. It is an untwisted rope made of many thousands of continuous filaments of viscose rayon, called rayon tow. It goes to manufacturers of mechanical packing, and is braided and impregnated with lubricants. Usually the finished packing is square in cross-section and is installed in the stuffing box in a spiral coil. The smooth, unbroken filaments of rayon show very low abrasion to the metal shafts they enclose, it is pointed out.

# A Safety Device for Pickers

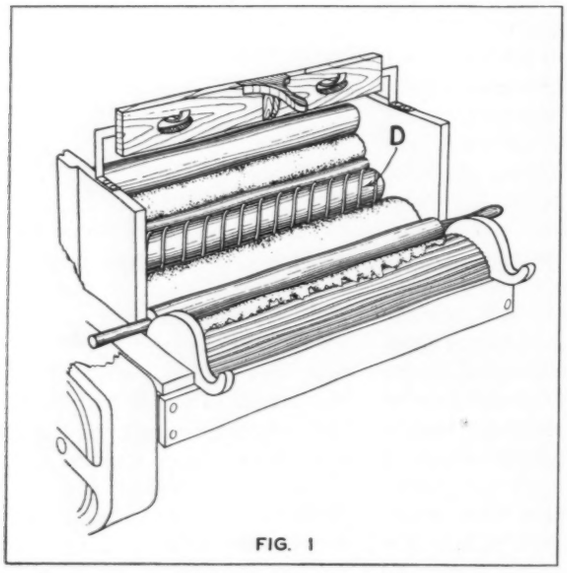

FIG. 1

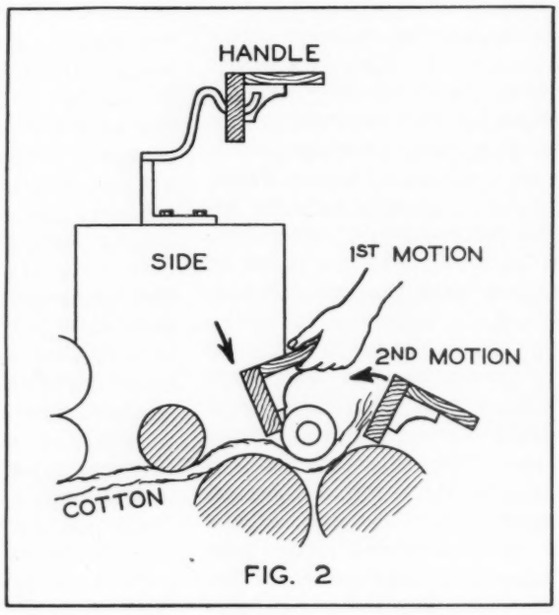

FIG. 2

MANY of the accidents occurring in the picker room happen when the lap is first begun and when the operative uses his hands to wrap the starting end around the roller. And aside from the ugly accidents, when using the hands to start the lap very often there is a large lump made which is detrimental to the card.

We have been using a device in our plant for the past seven years which eliminates the necessity for the operative to place his hands close to the rolls of the picker in the starting of the lap. This is shown in Fig. 1, which is a front view, at Fig. 2, which is a side view, and also shows how the device is used in starting a lap. Since the installation of the board, which we call the "leading-in board", we have not had an accident at this point on the picker, or an accident in starting the sheet of lap around the pin.

As can be seen from Figs. 1 and 2, it is quite a simple contraption. The board is wood and about 39x4x¾-inches, with a handle in the center and two holes so that it can be hung on the hooks provided for it. It is all that is needed to lead the starting sheet between the calender and lap roll and then around the lap roll in an easy way, keeping the hands from the moving part and at the same time doing an excellent job of starting the sheet around the pin.

Another device, which is a real time-saver and also practical, is the one shown in Fig. 3. It serves the same purpose as the device described previously and shown in Figs. 1 and 2. It hangs on two flat iron pieces and is drawn into the resting position by two springs. In starting the lap the operative gets a hold on this free hanging board, pulls it down to wrap the oncoming sheet of cotton, and when through he simply lets go of the board, which is then pulled into the resting position by two springs, whose spring action has to be carefully adjusted to the correct leverage needed.

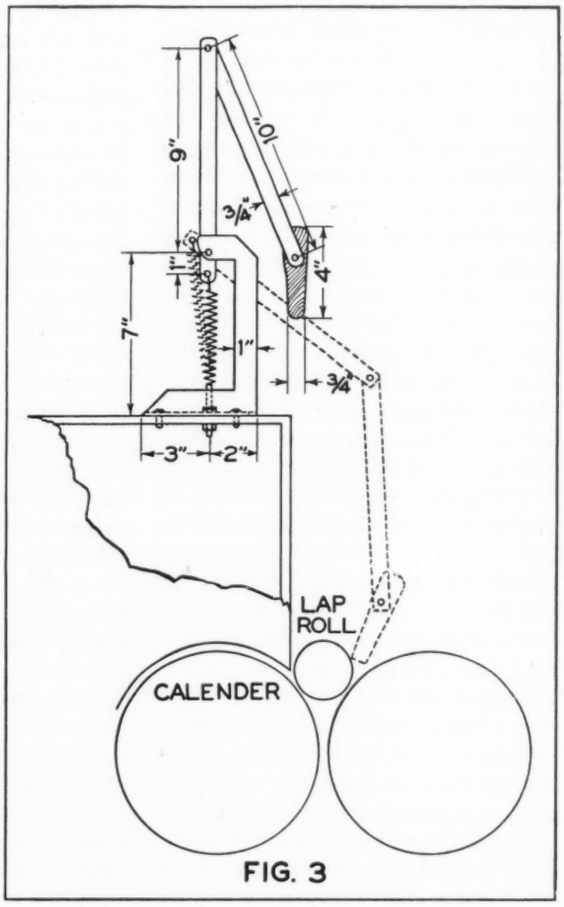

FIG. 3

The whole outfit consists of two

welded 1-inch angle iron pieces, about a yard of ¾-inch flat iron, and a board which may be shaped to suit and then painted. The two springs and a few screws may be installed by the local mechanic.

The press roll with copper wires seen at "D" in Fig. 1 has nothing to do with the safety device, but wire is spiraled on the roll to give extra pressing and thereby tend to increase the firmness of the delivered lap and prevent it from splitting. This device is not needed for good cotton, but in case of mixing cotton with waste, or when running all waste, it becomes handy.

Of course, two roving slivers run along with the lap sheet while it is being wound serve the same purpose, and prevent the lap from splitting, but the copper rolls are simpler and less troublesome.

# Take an Inventory of Your MANPOWER—Now!

## By Major General L. B. Hershey

Director, Selective Service System

**WE ARE glad to present this discussion by General Hershey. It not only carries an urgent request from the head of selective service, but also answers a number of questions that have arisen in the minds of textile mill executives and their employees. We urge every one to read it carefully, and then to act promptly in accordance with its instructions and requests.—The Editor.**

MANPOWER is a most important strategic material of today. Every employer should make a prompt inventory, appraisal and analysis of the manpower in his own plant as he would inventory his stock pile. In order to keep production going and at the same time furnish men for the armed forces, industry should now establish an orderly replacement program.

In order to secure temporary deferments for essential men while he is training women, young men, older men, men physically handicapped or those with a high degree of dependency, the employer should know the fundamental principles in the operation of his local Selective Service Board. Certain steps should now be taken by each employer. He should know how many men on his pay roll are between the ages of 20 and 45. He should investigate the classification of every one of those men. On the basis of such an inventory he should prepare to plan ahead and train men for replacement of those who must necessarily enter the armed forces if we are to have the sort of army which can win the war.

### Deferments Temporary

Deferments, granted so that employers may train women or men not liable to early induction, are temporary deferments; they cannot exceed six months and in many cases may be for only 30, 60 or 90 days. The Army today has to train a bomber pilot within a period of eight months to operate a very technical machine with an instrument board which puzzles an expert. Why, therefore, should industry insist that it assume that it can take two or three years to train men for industrial tasks not nearly so complicated?

The fundamental purpose of every deferment of a registrant is to allow an employer to train a replacement. Only in a few rare instances can an employer expect to have these temporary deferments continued for more than the six months period. These are only in cases where an abnormally long period of training is required for a replacement and the eight months needed in which a bomber pilot can be turned out now, is something to remember in this connection.

### Employer's Responsibility

Employers may seek the deferment of their necessary men with or without their consent.

Here is how they go about it.

On page 3 of the Selective Service Questionnaire (Form 40) which is sent to each registrant before he is classified is the following:

INSTRUCTIONS.—IF YOUR EMPLOYER BELIEVES THAT YOU ARE A NECESSARY MAN IN A NECESSARY OCCUPATION, IT IS HIS DUTY TO FILL OUT FORM 42A REQUESTING YOUR DEFERMENT. YOU MAY ALSO ATTACH TO THIS PAGE ANY FURTHER STATEMENT BY YOURSELF WHICH YOU THINK THE LOCAL BOARD SHOULD CONSIDER IN DETERMINING YOUR CLASSIFICATION. SUCH STATEMENT WILL THEN BECOME A PART OF THE QUESTIONNAIRE.

This is on all the questionnaires distributed during the past six months. The fact that the Selective Service System now specifically mentions the filing of Form 42A as the manufacturers' duty is a clear indication of the Selective Service System view on the responsibility of each employer in this matter.

The employer can secure Form 42A at the local board and the local board will consider the employer's request when the form is properly filled out and signed.

If such request should be denied because the man, after consideration of the claims offered for him, is not considered to be indispensable to the company's operation, and is needed more in the armed services, the local board will advise the employer of its refusal of such an occupational deferment.

The local board does this by sending to the employer, at the same time it notifies the registrant of his classification, a Form 59.

### May Make Appeal

There are ten days after Form 59 is mailed by the local board to the employer during which the employer can appeal the registrant's case.

The registrant will not be ordered to report for induction during this ten-day period.

In order to take an appeal the employer simply has to sign his name to Form 59 which he has received, and return it to the local board; or in case the Form 59 is not received from the local board, any written request will have full value to make such an appeal effective.

When Form 59 is returned by the employer the appeal procedure becomes automatic.

All necessary forms are available at the local board in the employer's immediate vicinity or at the office of the State Director of Selective Service.

If the local board and the appeal board deny the appeal for the occupational deferment of a key man, the employer may then bring the matter to the attention of the State Director at the State Selective Service Headquarters, with the request that the case be reopened or appealed by him to the President.

### Definite Duty

A double duty rests upon the employer. He should personally know what his manpower situation is. He should not leave the job to a minor employee to decide who is necessary. The employer who delegates the task of filing a request for deferment to a clerk,

the executive who does not make a complete inventory of his whole plant today, is negligent. Likewise, the employer who files requests for deferment of men who can be replaced by women, or others, is keeping reinforcements out of an Army which is battling for us all. The employer engaged in essential war production who has been required to greatly expand his plant and who then fails to request deferment for his key men is also negligent.

A good rule to follow: Don't ask deferments for any men who can be replaced by training another individual not likely to be eligible soon for service in the armed forces.

Make an inventory, request deferment for any man whose immediate going into the armed services would retard production of vital war material or other services essential to the war effort, or who is needed to maintain national health, safety and interest.

Only when an employee is working in a critical occupation within an essential industry should a Form 42A be filed for his temporary occupational deferment.

### Make Replacements

Yes, an inventory within a man's own plant is called for; also an appraisal and analysis of the manpower in the community. There is many a man over 45, or a man physically handicapped, or a woman who can do that job that the 23-year-old boy is doing who took a 12-weeks course at a learn-quick school.

There are not more than sixty million people in this country who are capable of effective productive effort. These men and women represent our total manpower available to win the war. They must do everything that must be done in a total war; maintain transportation, communications and utility systems, maintain public services, grow food for ourselves and our allies, mine the metals and produce the raw materials, fabricate and produce the amount of consumers goods necessary to maintain even a restricted national life and the supplies, weapons and munitions of war; also most of all they must provide the men who land on strange shores in far places, the men who carry the fight to the enemy on a multitude of far-flung frontiers. The rest of the population who mine raw materials and produce the weapons with which these men fight must be a self-disciplined team working in unity. The individual personal convenience, comfort or pleasure, or the convenience and ordinary leisurely replacement programs of the employer, will have to be given progressively less consideration as the war gets tougher and the casualty lists grow.

When we hear of the big armies we are going to raise, we must all remember that it takes at least five men or women to produce what they eat, use, fight with, and wear. With less than sixty million availables in this country, those figures are worth deep consideration.

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### Golf Tournament Postponed

Due to transportation difficulties and war conditions, the Carolina Yarn Association has decided to postpone its annual golf tournaments for the duration of the war.

Present officers of the association, elected at a recent annual meeting, are: William H. Barnhardt, Barnhardt Brothers, Charlotte, N. C., president; Henry Kelly, American Viscose Corp., Charlotte, N. C., vice-president; "Perk" Thompson, Textiles, Inc., Gastonia, N. C., secretary; and E. W. Best, Celanese Corporation of America, Charlotte, N. C., treasurer.

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### Information on Motion Study

Today's very much simplified version of science known as motion study is of definite application to textile manufacture. A co-operative program based on new motion study texts born of war needs makes it easy and inexpensive to study and improve the methods of performing every type of individual job. One of the most modern books emphasizes the use of overall motion study preceding the study of individual jobs to eliminate unnecessary tasks. This is particularly important in view of the present labor shortage.

Enough typical illustrations are given in books of this type so that there is plenty of carry-over, no matter what the individual task may be. The examples make it easy to absorb the principles of motion study. A number of manufacturers have established motion study training classes in their plants. Others have put the new training books in the hands of executives and supervisors who in turn apportion to workers the study of individual jobs.

Those who once looked upon motion study as a science for specialists only will quickly rid themselves of this complex after a glance at the modern "written-so-that-all-may-understand-it" text. One of the up-to-date texts prepared especially for defense production is Herbert C. Sampter's "Motion Study", published by the Pitman Publishing Corporation, New York City.

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### Scholarships for Home Economists

The Philadelphia Textile Institute, Philadelphia, Pa., has offered two scholarships with full tuition to the American Association of Home Economists, in recognition of the need for more thorough training in textiles in home economics education in the various colleges, universities and high schools.

So much interest has been evidenced in this program that a number of textile firms have co-operated with scholarships. The following concerns have contributed two scholarships each: J. P. Stevens & Co., Celanese Corporation of America, Pacific Mills, and American Viscose Corporation. The following have contributed one scholarship each: Forstmann Woolen Company, S. Stroock & Co., and Archibald Holmes & Sons.

A program consisting of fundamental information in various textile courses has been prepared. This curriculum includes courses in weave formation, fabric analysis and structure, hand weaving, raw materials for the textile industry, cotton yarn manufacture, wool and worsted yarn manufacture, textile fibers, principles of textile color, basic principles of Jacquard design, knitting, microscopy, physical testing, textile finishing and the principles of dyeing.

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### Lunch Room for Employees

Adequate nutrition for workers is an acute problem today. Growth in personnel has taxed management, anti-sabotage restrictions discourage lunch boxes, increased night shifts have complicated the ordinary problems of meals on the job. Because of these and other contributing conditions, many companies are investigating the question of lunchrooms for employees. To meet the demand for information, the Policyholders Service Bureau of the Metropolitan Life Insurance Company, 1 Madison Avenue, New York City, recently issued a detailed study entitled "Lunchrooms for Employees".

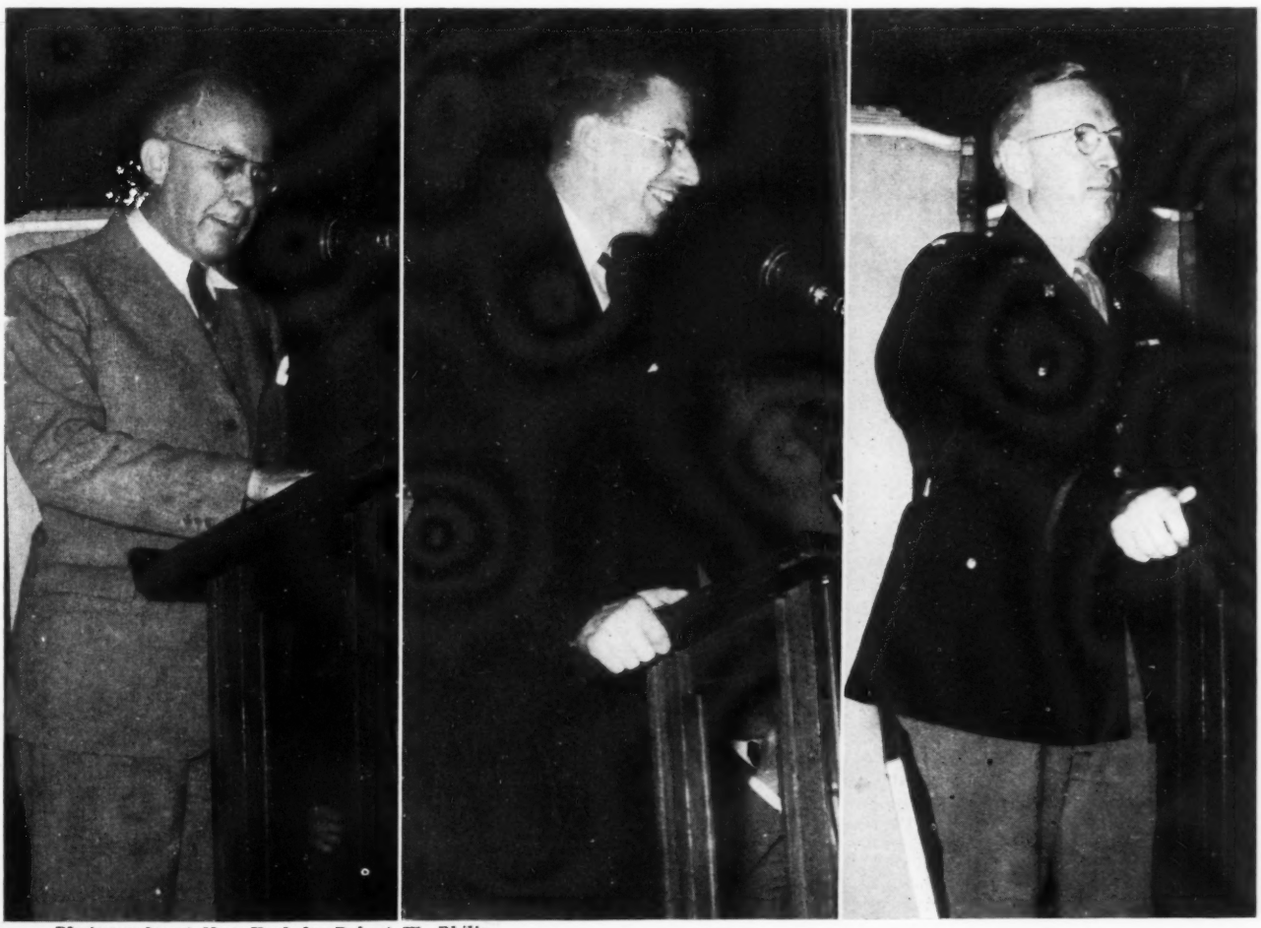
The report discusses and illustrates physical lay-out, offering practical data on equipment, management and menus. Several types of eating facilities are described, including coffee or lunch counter service, the rolling cafeteria, and the cafeteria serving complete meals. The problem of serving meals that will be both tempting and nourishing is touched upon, and typical menus are produced to indicate the kinds of meals that are served in representative employee lunchrooms.

# Cotton-Textile Institute Studies Problems of Wartime Economy

AUTHORITATIVE discussions on the current and future problems of the industry, and on its achievements and records in the war emergency, together with a strikingly effective session on research, constituted an exceptionally valuable program at the 16th annual convention of The Cotton-Textile Institute, Inc. The meeting was held on Thursday, October 22, at the Waldorf Astoria Hotel, in New York City, and was well-attended by mill executives, market interests and others.

Claudius T. Murchison, president of the Institute, presided at the first session, which was opened by the annual address of Dr. Murchison as president. He reviewed the record of the Institute and the industry it represents, covering particularly the manner in which, through common action, the industry has met the demands of the time and the impositions of governmental and legislative control on several fronts. Extracts of his address follow:

"During the past few months the industry has begun to feel the drain of its manpower. The annual turnover rate for the industry as a whole is now in the neighborhood of 100 per cent, which reflects vividly the transiency of labor under present conditions. The industry has suffered heavy losses, as is to be expected, through the draft and through voluntary enlistments. To an even greater degree it has given up its manpower to the emergency war industries. These latter have drawn heavily upon the most skilled of the industry's workers, particularly those with mechanical training and experience. Happily, in certain departments of the industry, such as spinning and weaving, the work is suitable for women. Consequently, it may be expected that within the months that lie ahead, the percentage of women employees in the industry will grow very rapidly, and will eventualy represent possibly as much as two-thirds of the total number of employees. In certain areas of the industry the emergency labor situation now existent could be substantially relieved by waiving the 18-year age limitation for women, as contained in the



*Photographs at New York by Robert W. Philip*

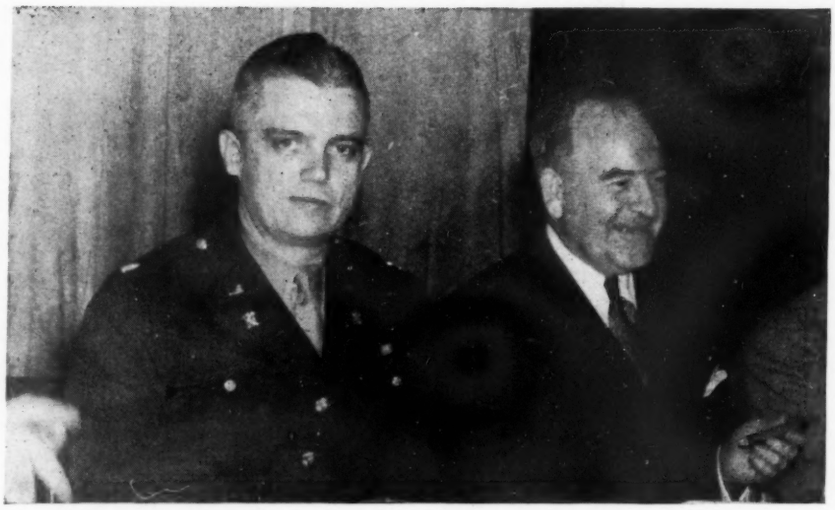
**The morning speakers.** Left to right, **Claudius Murchison,** delivering his annual address as president of the Institute; **J. K. Galbraith,** deputy administrator of OPA, speaking on "Anti-Inflation Control", and **Colonel E. S. Shattuck,** of the Selective Service System, discussing the subject of manpower . . . . . .

Walsh-Healey Act. For some time the Department of Labor has had this question under advisement, and it is hoped that an early and affirmative decision will be made."

"The industry has already begun to feel the pinch of inadequate supplies and machinery replacement, although in these respects it has not suffered nearly so much as many other industries. It is inevitable that the procurement of equipment and repair parts will become more and more difficult as the building of ships, tanks, airplanes and guns becomes more rapid. Every item in the mill inventory of repair parts, and all material in the mill machine shop will soon be worth their weight in gold. Every cotton mill, if it is not already doing so, will soon be nursing tenderly its every machine as if it were a diamond-studded watch, because only in this way can the industry's production efficiency be maintained."

Dr. Murchison described the job to be done, in the field of scientific research and sales promotion, against the time when greater availability of competing materials, themselves utilizing these same forces, will constitute a threat to cotton consumption that has been set aside by the war emergency.

J. K. Galbraith, deputy administrator of OPA, was the second speaker, discussing "Anti-Inflation Control". He reviewed the relationships between OPA and the textile industry, declaring that this industry is "the oldest client of OPA", and paying tribute to the general spirit of co-operation and helpfulness manifest by the industry. He indicated that there is the early possibility that the existing structure of regulation will be simplified—put in dollars-and-cents terms wherever possible. He urged complete co-operation by the mills in complying with the spirit of a regulation as well as with the letter. He said, "I believe the man that reads OPA regulations not in a spirit of compliance but in a spirit of improving on them for his own purposes is a genuine foe of the industry itself. He is the fellow who is committing all of you to the complexities, to the amendments which it is necessary for us to make in order to stop that sort of thing. Let us find the maximum conditions of compliance rather than the minimum conditions. It is to the advantage of all of us to work that way."



**Lieut.-Colonel Robert T. Stevens**, of the Quartermaster Corps, who delivered an effective address on the part of the textile industry in the war effort, is shown here at the Institute luncheon with **W. Ray Bell**, right, president of the Association of Cotton Textile Merchants of New York, who presided at the luncheon session . . . . . .

Col. Edward S. Shattuck, chief counsel of the Selective Service System, was the final speaker at the first session. He discussed the subject of manpower, particularly in conjunction with military service, and the role of the employer in achieving the national objectives. (A similar discussion of this subject by General Hershey, head of SSS, is to be found on page 73 of this issue of COTTON.)

W. Ray Bell, president of The Association of Cotton-Textile Merchants of New York, presided at the luncheon session, where the speaker was Lieut.-Col. Robert T. Stevens, who resigned the presidency of J. P. Stevens & Co., leading textile commission merchants, to become head of textile procurement in the Quartermaster Corps of the U. S. Army. Colonel Stevens made a forceful address, dealing with the part of the cotton-textile industry in the war effort. He paid tribute to the response of the industry to the war demands, in the supplying of extraordinarily large requirements of all types of cotton goods, particularly the heavier grades, in the conversion of other mills to duck, etc. The extent of the conversion program was illustrated by the fact that the current rate of production of cotton duck is five times the normal rate of produc-

## Testimonial Dinner for W. M. McLaurine

**A DELIGHTFUL AFFAIR** incident to the Institute meeting was the testimonial dinner on Wednesday evening, October 21, honoring W. M. McLaurine, secretary-treasurer of the American Cotton Manufacturers Association for the past 15 years. The affair was held at the Astor Hotel, under the auspices of the Textile Square Club, whose president, Harry Riemer, of "Daily News Record", served as toastmaster. Several hundred friends of this charming and useful figure in the industry attended to express their admiration and affection for him. Speakers included W. Ray Bell, Herman Cone, William N. Banks, Claudius Murchison, Floyd W. Jefferson, and Hugh Comer—each tastefully and effectively paying tribute to "Mac". Roy Bagge, of the Club, read a tribute from George S. Harris, who was unable to attend.

This snapshot shows William N. Banks, immediate past-president of the American Association, as he paid his tribute to Mr. McLaurine (center), with Herman Cone, the present president, shown at the left. (For a photograph of Hugh M. Comer, one of the speakers, see page 59. "Shorts and Remnants" seemed an appropriate place to put it.)

tion; and 38 per cent of the production comes from converted mills. Based on present known requirements, the speaker stated, production in this field is fully adequate.

Unable naturally to predict future requirements, because so many things—notably the size of the army—affect this, Colonel Stevens said: "Our requirements for next year may also be greatly affected by the development of new items or by new uses for old items. We have been faced already with many needs for special types of fabrics and finishes—mildew proof, tear proof, fire resistant, wind proof, water proof, water repellent, etc. * * *

"To keep production at a high level will be no easy task for you. It is my considered opinion that cotton-textile production has reached its peak and that your big job will be to maintain rather than to increase operations. It will require the finest type of management and the highest grade of American ingenuity to hold up our production level through the months to come."

On the subject of re-negotiation of contracts, Colonel Stevens said the legislation calling for this "was designed to eliminate excessive profits from war contracts primarily by reducing prices in order to keep costs at a minimum. Excessive profits do not necessarily mean that a company has been guilty of gouging or profiteering. In many new items there was no basis on which to make a price except a rough estimate of cost. After companies went into production many found that through high volume or efficient management or improvement in production techniques, the cost of manufacture was much less than originally estimated. Therefore, the price to the government was excessive. The re-negotiation legislation was planned to permit the government to eliminate this excess through refunds or price reduction. * * * In the cotton-textile field most mills are manufacturing substantially the same general type of products which they made in peacetime. When their bids were submitted they were based on years of experience in the computation of costs, and the manufacturer knew fairly accurately what his margin of profit would be. Furthermore, there has always been great price competition in the textile field and that competition still exists today to a considerable extent. Furthermore, the Quartermaster procurement authorities know something about production costs also. These factors tend to keep prices and profits within reasonable limits."

### Session on Research

The entire afternoon session of the convention was devoted to research in textiles, with Fessenden S. Blanchard, president of the Textile Research Institute, presiding. There were three speakers: P. N. Collier, vice-president and director of research, Callaway Mills, LaGrange, Ga.; Simon Williams, research technologist, Bureau of Industrial Chemistry, University of Texas, Austin, Texas; and D. F. J. Lynch, director of the Southern Regional Research Laboratory, at New Orleans. Dr. Lynch described the equipment, facilities and activities of this governmental bureau which operates under the Department of Agriculture.

Mr. Collier and Dr. Williams presented forceful discussions on the need for research on cotton and its products. Both were fervent in their pleas for more intensive and extensive effort in this direction, as the hope of salvation for the fiber and its products when wartime demand ceases; both paid tribute to the part of research in the development of competing materials. Mr. Collier proposed a sustained program of co-operation and research, and declared such a program must be comprehensive, extending from the cotton field right up to the ultimate consumer of the goods. He said, "There are a number of agencies at work at present, and they are doing splendid work on relatively small appropriations and are nominally co-operating at this time. It is to be hoped that this co-operation may be accelerated. It is certain, and recognized, that much duplication of effort now exists. This is most unfortunate since there is vastly more work to be done than our under-staffed laboratories can possibly do to assure the future of cotton."

Dr. Williams declared that the needs of the cotton industry might be described as follows:

"In the first place, despite all of

**The research speakers.** Left to right, **F. S. Blanchard**, president of the Textile Research Institute, who presided; **Perrin N. Collier**, vice-president and director of research, Callaway Mills, LaGrange; **Simon Williams**, of the bureau of research, University of Texas, Austin; **and D. F. J. Lynch**, director of the Southern Regional Research Laboratory, New Orleans

our study and growth, we are constantly faced with our inexperience. The scope of any applied research program will depend in a large measure on the breadth of experience in the field of industry with which the research is concerned. We have become convinced that unless practically all future research on cotton is to be very specific in application and consequently of relatively local importance, the industry must have some central research agency in which all of its extremely complex experiences can be pooled for mutual benefit. There is no one group now in existence with talent enough to apply its efforts equally to the needs of all of the cotton mills.

"Secondly, three kinds of research must be going on simultaneously in the industry. These are:

"1, Fundamental research aimed at developing basic information about cotton and the machines upon which it is processed. 2, Applied research of a general nature, developing these fundamental data into a form capable of translation into commercial use to render the competitive position of cotton generally more favorable. 3, Product research by each and every mill for the betterment of its own products; a keen healthy competition within the industry should be in existence.

"Third, when a particular research project has been completed, there should be available a service organization to trouble-shoot for those mills attempting to utilize the new development.

"Finally, the cotton-textile industry is sorely in need of technologists trained to the research approach to its problems. I'm sure it has been the experience of many of you that in seeking research personnel, you have had to go outside of the textile industry and outside of the textile schools."

He described the origin and operation of the Institute of Paper Chemistry, at Appleton, Wis., a co-operative research institution, which functions in two ways: on a specific research problem, the member pays for the job and receives exclusively the results; and fundamental and generally applicable research is carried on by graduate students and the results of their work made available to all members. In addition to its research work, Dr. Williams pointed out, this institute at the same time is training men, with a research approach, for the members of the industry. He urged the formation of some such institute for the cotton-textile industry.

## "Cotton Counts Its Customers"

The cotton industry's first comprehensive study of cotton uses by volume has been completed. Compiled into a graphically illustrated 32-page booklet, titled "Cotton Counts Its Customers", the study represents two years of painstaking research under the joint sponsorship of the National Cotton Council and the Bureau of Business Research of the University of Mississippi. M. K. Horne, Jr., and Frank A. McCord co-authored the work.

The study is a compendium of facts and figures drawn from thousands of sources and gives for the first time a complete statistical picture of the amount of cotton going into each consumer use. All of the 266 known uses which use substantial quantities of cotton lint are listed and opposite each product is given a careful estimate of the number of bales which that product consumed during 1939, the last year in which essential statistics are not strongly influenced by war production. The figures listed range from the 633,100 bales that went into automobile tires—the largest single consuming category—to the 100 bales used for map and chart backing.

The initial purpose of the study, according to Dr. Horne, is to give the industry a scientific basis for determining future plans in regard to an extended use of cotton products. He points out that, for instance, careful emphasis can now be given to the 17 uses which topped the 100,000 bale mark while at the same time action can be taken to prevent the overlooking of a small but healthy customer which otherwise might get lost in the rush.

To illustrate the type of surprisingly important customers which the cotton industry must not overlook, Dr. Horne points out that during the more or less normal year, 1939, the manufacture of window shades used 29,260 bales; oilcloth, 62,530 bales; bookbinding, 22,750; horse and mule harness, 37,500; laundry supplies, 39,380; work gloves, 48,600; hats, 15,340; diapers, 14,270; and caskets, 16,700.

The study is divided into three main features: the lengthy table in which the uses are grouped alphabetically within the three major divisions of apparel uses, household uses, and industrial uses, with the cotton consumption in each use being given for both 1937 and 1939; an array of picturegraphs showing 100 or more leading uses arranged in the order of their size; and an extensive appendix giving supporting data for each estimate.

### Greenville Textile Show Postponed

The executive committee of Textile Hall Corporation has announced that the date of the 15th Southern Textile Exposition will be deferred. The textile show was to have been held April 5-10, 1943, but war conditions are of such a nature as to make it advisable to hold the exposition later. No definite time has been fixed, but the committee will at some future meeting select the date and authorize issuing of the prospectus.

More than a hundred applications are still on file after a few exhibitors having war contracts in other than the textile field, or for other reasons, withdrew. The postponement is not for lack of exhibitors. Other factors, including the difficulties of transportation, brought about the decision to defer the Exposition until conditions are more favorable. In the meantime, the plans will be perfected and preparatory work for the show continued.

The executive committee of Textile Hall Corporation is composed of the following: J. A. McPherson, chief engineer, J. E. Sirrine & Co., chairman; R. W. Arrington, president, Union Bleachery; S. M. Beattie, president, Woodside Cotton Mills Co.; W. W. Carter, treasurer, Fiske-Carter Construction Company; C. E. Hatch, president, Brandon Corporation; and Edwin Howard, southern sales manager, Veeder-Root Incorporated.

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### New Rayon Much Finer Than Silk

American chemical genius has handed another body-blow to a well-known Japanese citizen, the silkworm. Celanese Corporation of America, 180 Madison Ave., New York City, has announced the development of a synthetic filament so fine that whereas the finest silk filament weighs approximately 1 denier, this new filament weighs ⅛ of 1 denier. One hundred and sixty of these filaments are twisted together to form a 20 denier Celanese "Fortisan" yarn which promises to be a great factor in post-war textile development both in consumer and industrial fields. The more filaments that go to make up a given size of yarn, the softer that yarn is; also the larger number of filaments permits a great amount of air to be trapped inside the yarn, thereby giving greater warmth.

"Fortisan" is the name given by the company to its range of super-strong yarns. Since shortly before the entrance of the United States into the war the entire output of "Fortisan" has been earmarked for war work in fields where once silk was used exclusively.

# A Slasher Blanket Made of Cotton

**By G. H. Dunlap***

THIS preliminary report on a cotton blanket for covering the squeeze rolls on the slasher is the result of several months' experimentation in which four leading cotton weaving mills in the Southeast co-operated with The Southern Textile Association, The Arkweights, and The Textile Foundation.

Cotton has been one of the principal fibers used in supplanting wool for covering the squeeze rolls on a slasher. The chief objections to the use of a blanket made from cotton have been its lack of resilience and the hardening of the cotton blanket on the rolls. This hardening of the cotton blanket has a tendency to flatten the yarn, and does not allow the proper penetration of the size solution into the yarn during slashing.

The principal reasons given for slashing cotton warp yarns are: (1) to improve the weaving qualities of the yarn, (2) to give added weight to the finished fabric, and (3) to produce a given finish to the woven cloth. The squeeze rolls on a slasher, weighing several hundred pounds, have to be wrapped with a fabric that possesses a cushion, and wool because of its resiliency has served the purpose for many years despite the many attempts to substitute other fibrous materials.

In developing the cotton blanket material used in these tests, consideration was given to past criticism of the cotton materials. The construction of the fabric used in the cotton blankets in these tests is given as follows: (a) width in inches—60, (b) ends per inch —72, (c) picks per inch—19, (d) warp count—30s, (e) filling count 1.5s (produced on speeder), and (f) yards per pound—.61.

It is not claimed by any of the co-operating mills that the cotton slasher blanket possesses the cushioned properties of wool. It is admitted that the cotton blanket will harden on the squeeze rolls with use. However, this condition can be easily remedied by frequent washings of the blankets in water. The co-operating mills also state that the blankets should be removed from the rolls and left in water when the practice of stopping the slasher over the week-ends is followed.

The low initial cost and long life are the main advantages claimed for the cotton blanket. It is recognized that this cotton fabric may not be suitable as a slasher blanket for the slashing of all types of weaving yarns, but on certain constructions, such as have been selected for these tests, it has proved successful. In only one of the four co-operating mills has the life of the cotton blanket been determined. Tes data for this mill show that the cotton blanket ran for a period of 1,608 hours, as compared with 288 hours for the wool blanket. The other mills are still running the test and as yet have encountered no difficulty. The cost of the cotton material is estimated to be about one-fifth the initial cost of wool.

The count of yarn slashed, the yards slashed per minute, the weight of squeeze rolls and other mechanical conditions observed during the testing of the cotton blankets is shown in Table I.

Attention is called to the fact that in each of the co-operating mills where the yarns were slashed with the squeeze rolls covered with the wool, and with the cotton blankets, samples of the sized and unsized yarns collected for test purposes were taken from the same set of warper beams. In each mill the same slasher was employed for testing both the cotton and wool squeeze roll coverings. These results have been tabulated and are shown in Table I.

All of the physical testing was done by G. H. Dunlap in the laboratories of the cotton branch of the Agricultural Marketing Administration, United States Department of Agriculture, located in the Clemson Textile School, Clemson, S. C.

The cotton slasher blanket was developed and manufactured by the Joanna Textile Mills Company, Goldville, S. C. This cotton manufacturer co-operated in the test by supplying a sufficient quantity of the material for testing purposes in all of the mills listed in this report.

These data represent the results from tests made in four mills and are not intended to show that the cotton slasher blanket, of the construction used in these tests, is satisfactory for slashing all counts of weaving yarns for all constructions of fabrics.

**TABLE 1.—MECHANICAL INFORMATION, CONSTRUCTION OF CLOTH WOVEN, AND COMPARATIVE TEST RESULTS OF COTTON YARNS SLASHED WITH THE SQUEEZE ROLLS COVERED WITH WOOL AND COTTON BLANKETS.**

**MECHANICAL INFORMATION**

| Cooperating Mill | A | | B | | C | | D | |
|---|---|---|---|---|---|---|---|---|
| Type blanket | Wool | Cotton | Wool | Cotton | Wool | Cotton | Wool | Cotton |
| Count of yarn slashed | 36/2s | 36/2s | 36/2s | 36/2s | 29.65 | 29.65 | 30.00 | 30.00 |
| Yards slashed per minute | 36 | 36 | 25 | 25 | 36 | 36 | 60.5 | 60.5 |
| Weight of first squeeze roll | ..... | ..... | 500 | 500 | 360 | 360 | 245 | 245 |
| Weight of second squeeze roll | ..... | ..... | 400 | 400 | 550 | 550 | 468 | 468 |
| Temperature of: | | | | | | | | |
| Small cylinder (degrees F) | 232 | 232 | 230 | 230 | * | * | 220 | 220 |
| Large cylinder (degrees F) | 241 | 241 | 230 | 230 | * | * | 210 | 210 |
| Size box (degrees F) | 202 | 202 | 200 | 200 | ..... | ..... | 204 | 204 |
| Temperature controls: | | | | | | | | |
| Cylinders | yes | yes | yes | yes | no | no | yes | yes |
| Size box | yes | yes | yes | yes | no | no | yes | yes |
| Level control in size box | yes | yes | yes | yes | no | no | yes | yes |
| Yards of blanket used on: | | | | | | | | |
| First squeeze roll | 7 | 5 | 8 | 5 | 5 | 5 | 7 | 5 |
| Second squeeze roll | 7 | 10 | 8 | 10 | 6 | 10 | 7 | 10 |
| **CONSTRUCTION OF CLOTH WOVEN BY COOPERATING MILLS** | | | | | | | | |
| Ends per inch | 105 | 105 | 101 | 101 | 64 | 64 | 22 | 22 |
| Picks per inch | 56 | 56 | 54 | 54 | 60 | 60 | 18 | 18 |
| Width of cloth (inches) | 40 | 40 | 44.47 | 44.47 | 41 | 41 | 37.5 | 37.5 |
| Yards per pound | 1.72 | 1.72 | 1.50 | 1.50 | 5.00 | 5.00 | 19.0 | 19.0 |
| Type goods | Army twill | Army twill | Army poplin | Army poplin | Shade cloth | Shade cloth | Gauze | Gauze |
| **TABULATION OF RESULTS** | | | | | | | | |
| Loom stoppage per hour or per cent production | 93.00 | 93.00 | 94.00 | 94.00 | .55 | .52 | | |
| Per cent size in yarn | 3.98 | 3.57 | 5.08 | 4.50 | 12.50 | 11.20 | 8.18 | 7.94 |
| Per cent moisture in sized yarn | 3.84 | 4.87 | 6.12 | 5.92 | 8.23 | 7.51 | 7.75 | 8.09 |
| Per cent regain in sized yarn | 3.99 | 5.12 | 6.52 | 6.29 | 8.97 | 8.12 | 8.41 | 8.80 |
| Per cent stretch in: | | | | | | | | |
| Sized yarn | 4.25 | 5.13 | 4.62 | 5.60 | 4.78 | 5.00 | 5.83 | 5.76 |
| Unsized yarn | 6.26 | 6.26 | 8.58 | 8.58 | 5.52 | 5.52 | 6.68 | 6.68 |
| Single strand tensile strength: | | | | | | | | |
| Sized yarn (pounds) | 1.31 | 1.30 | 1.36 | 1.33 | .752 | .749 | .635 | .652 |
| Unsized yarn (pounds) | 1.24 | 1.24 | 1.29 | 1.29 | .590 | .590 | .571 | .571 |
| Increase in tensile strength of sized yarn over unsized yarn (per cent) | 5.65 | 4.84 | 5.43 | 3.10 | 27.46 | 26.95 | 11.21 | 14.19 |
| Decrease in stretch after sizing (per cent) | 32.11 | 18.05 | 46.15 | 34.73 | 13.41 | 9.42 | 12.72 | 13.77 |
| Life of blanket (hours) | 336 | 1/ | 500 | 2/ | 288 | 1608 | 336 | 3/ |

*9 pounds steam pressure. 1/ Running since Aug. 24, 2/ Running since Aug. 26, 3/ Running since Sept.4.

*Professor of Carding and Spinning, Textile School, Clemson A. & M. College, Clemson, South Carolina, on leave of absence.

# Reclaiming Worn Parts Discussed at Meeting in Charlotte

REPAIR and reclamation of broken machine parts featured the discussion at the fall meeting of the Piedmont Section of the Southern Textile Association. The meeting, attended by a small but interested group, was held on Saturday morning, October 3, in the Charlotte Hotel, Charlotte, N. C.

B. M. Bowen, superintendent of the Salisbury (N. C.) Cotton Mills, presided as chairman of the section, assisted by Marshall Dilling, secretary-superintendent of the A. M. Smyre Mfg. Company, Gastonia, N. C., who is executive secretary of the association.

James T. McAden, of Charlotte, who recently became associate editor of the *Textile Bulletin*, Charlotte, N. C., vice B. Ellis Royal, now in the armed forces, was made secretary of the section succeeding Mr. Royal also in this position.

In opening the meeting, Mr. Bowen presented W. M. Parsley, in charge in North and South Carolina of the industrial salvage section of the conservation division, War Production Board, who spoke on the current campaign to collect scrap iron for use by the steel mills, and urged full participation in this drive on the part of the textile mills.

### Repairing Worn Parts

The chairman called on T. C. Pegram, president of the Southern Textile Association, who is superintendent of the Erwin Cotton Mills Co. Plant No. 3 at Cooleemee, N. C., to start the discussion on methods of salvaging parts and repairing broken ones. Mr. Pegram said, "We have adopted a system at Cooleemee that we think is very effective. Every broken part that comes from the weave room is segregated according to shifts. We have a very high-type loom fixer who goes through these parts, and those he decides can be salvaged are put aside and are taken to the shop; and the parts that cannot be saved are thrown into the junk-pile. Also, when he comes across parts that should not have been taken out at all, he gives these to the overseer with the fixer's number. Every part has the section number on it and we can spot the fixer and know the section it came from.

**Marshall Dilling,** superintendent and vice-president, A. M. Smyre Mfg. Co., Gastonia, N. C., and executive secretary of the Association, speaking at Charlotte on the subject of repairing broken machine parts . . .

**G. H. Dunlap,** in charge of research for the Association and its affiliate, The Arkwrights, Inc., reporting at Charlotte on the new slasher blanket made of cotton cloth (see detailed report by Mr. Dunlap on page 79 of this issue of "Cotton" . . . . .

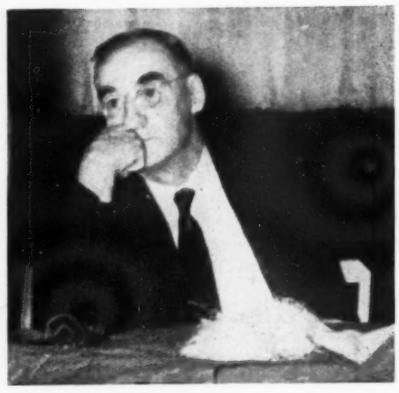
"We are now welding parts that we did not know could be welded, and I made the remark the other day that if the mill at Cooleemee had always tried to save parts and had done as much along this line as we are doing today, I believe they could have built another cotton mill. It is certainly very embarrassing to have to admit what we have sent to the junk-pile in the past. I look at the scrap table at least once every day, and I visit the welding shop several times every day and keep right up with the welding, and spend right much of my time finding out why something cannot be fixed so we can run it again. I believe that if any mill man will spend more time around his broken parts he will be surprised to find out how much he can save.

"We have one man, with a great deal of experience in the weave room, who finishes off the repaired parts that are going back to the looms. We do this because for a while we had trouble with some of the loom fixers not wanting to accept parts that had been repaired by men they knew were not familiar with the conditions of the weave room."

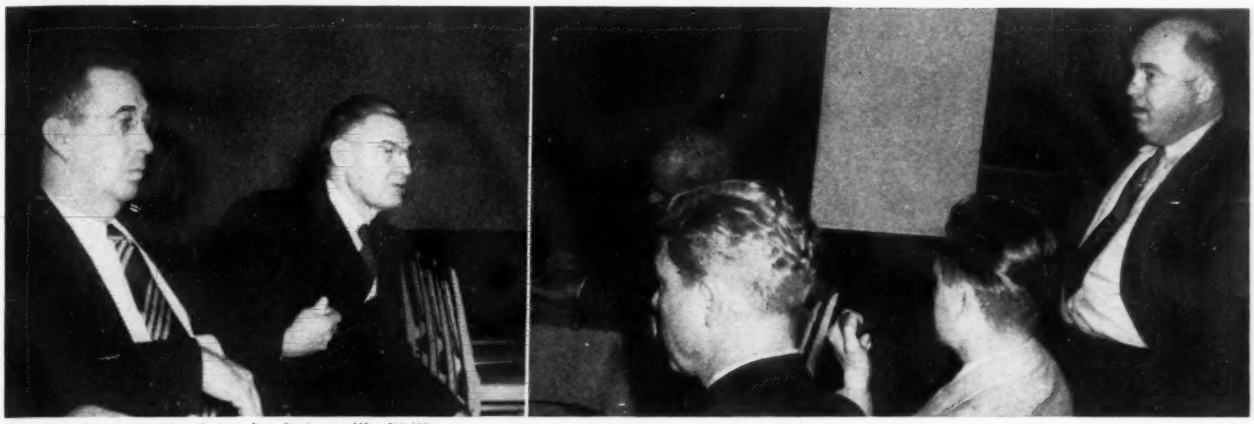
### Causes of Broken Parts

David Clark asked whether it is true that more repairing of parts is being done today than ever before, and there was unanimous agreement that this is the case. He suggested that Mr. Dilling discuss the problem.

Mr. Dilling brought out—in discussing what causes parts to break—that "they will break as long as we have machinery. If you made a certain part so strong that it would not break, that would cause some other part, and probably one a lots more valuable, to break or give way." He pointed out that under the current war conditions, to meet government requirements, many mills are now making fabrics much heavier than their mills were originally equipped to manufacture, and that this undoubtedly contributes to extraordinary part breakage. He said much breakage of gears comes from improper setting, and that building up on shaft bearings aids greatly in reducing gear losses. He commented on the fact that most of Mr. Pegram's comments had been directed at



**B. M. Bowen,** superintendent, Salisbury (N. C.) Cotton Mills, chairman of the Piedmont section, listening intently to a discussion during the meeting in Charlotte . . .



*Photographs at Charlotte by Robert W. Philip.*

**T. C. Pegram**, of Cooleemee, N. C., president of the Association, and **J. O. Corn**, of High Shoals, N. C., a past-president, listening to **F. E. Bozeman, Jr.**, (right) of Whitin Machine Works, discuss the causes of worn and broken machine parts . . . . . .

loom parts breakage, and it was generally conceded that in a weaving mill, loom parts replacement is by far the greatest in the plant.

This was concurred in by the next speaker, J. O. Corn, superintendent, High Shoals (N. C.) Plant of Jackson Mills, who said that in his opinion, "the greatest percentage of breaking is due to a lack of proper fixing. We all realize that all of us have lost a lot of our better men, and I think that has added to the problem. However, we do not do a great deal of repairing on loom parts. Generally we are not getting quite as good supplies nowadays as we used to get. I don't know whether that is due to the shortage of the proper materials, but it seems to me that we are using more, particularly more of the cast parts."

### Vibration and Improper Application

F. E. Bozeman, Jr., manager of the southern repair shop of Whitin Machine Works, Charlotte, N. C., was called upon, and expressed the belief that most parts breakage is caused by improper installation or application, and by vibration. All parts made by the machinery shops, he said, are planed off to a flat surface and are supposed to be interchangeable, and are to a certain extent, but if every fixer in the mill would learn to file and to fit like the erectors do, and take out what is called the "rock", and make them fit absolutely perfectly, much longer parts life would result. He emphasized that if a part has a stud on it, that stud should be exactly at a 90-degree angle. Vibration on roll necks, bedding down in the stand and not fitting in the bearing, causes a constant "bending" and eventual breakage. Bad cylinders, or any other part out of balance, will produce vibration that results in shortened life and excessive breakage, and vibration is caused mainly from worn bearings.

Robert W. Philip, editor of COTTON, Atlanta, was called upon, and added that the problem of parts replacement is being accentuated by extended running schedules, which at once produces greater strain on the equipment and prevents the shut-downs normally available for pre-inspection and repair; as well as by the increasing shortage of trained, experienced men. He suggested that Mr. Bozeman discuss the use of metallizing as a means of parts reclamation and repair.

### Metallizing Worn Parts

Mr. Bozeman reported excellent success with this method, more particularly on such things as shafts, arbors, journals, brass twister rolls, etc. He said it is far superior to acetylene welding on flat or round parts, and that it can be used successfully on internal surfaces by spraying only a small cut at a time. He pointed out that this process builds up by adhesion, and must be bonded on, as it is not a weld and does not have a fused bond.

### Slasher Cloth of Cotton

Changing the subject somewhat, the chairman called on G. H. Dunlap, who is in charge of the association's research activities under a grant from The Textile Foundation, and Mr. Dunlap reported briefly on an interesting experiment with the use of a specially-woven cotton fabric as a slasher blanket to replace the customary woolen slasher cloth, now being scarcer and scarcer due to the wool shortage. He explained that the fabric is a 60-inch, 72x19 construction, with 30s warp and with 1.5s filling made on a speeder. He said he had not made conclusive tests as yet, but that so far the cotton slasher cloth seems to be holding up very well in comparison with wool, and producing good results, with the only drawback appearing thus far being the fact that it fills up and gets hard, but that he is experimenting with a slight change in construction that may overcome this. In answer to a question from Mr. Corn, he said it had been found best to take out the cloth and wash it after each set.

Mr. Dunlap emphasized that the proposition is still very much in the experimental stage, but that so far, no serious handicaps had been encountered, and promised a detailed report just as soon as more conclusive information is available. (See report on page 79 of this issue of COTTON.)

## Steel Heddle Buys J. F. Johnson & Company

Steel Heddle Mfg. Co., with main plant and general office at Philadelphia, Pa., have recently purchased the business of J. F. Johnson & Co., of Philadelphia which for the past 32 years have been manufacturing precision tools, ordnance gauges and special machinery. The equipment and most of the employees have been moved into Steel Heddle Mfg. Company's large building at 2100 West Allegheny Ave., Philadelphia, where the business is being greatly enlarged under the supervision of J. F. Johnson.

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## Rayon Display at Smithsonian

A new display designed to illustrate how viscose, acetate and cuprammonium rayon are made has been prepared by the American Viscose Corporation and the American Bemberg Corporation and installed in the Division of Crafts and Industries of the Smithsonian Institution at Washington. The display contains three panels in which are shown side by side the principal steps in each process, so that visitors to the Museum can easily compare the different raw materials, chemicals and types of equipment used in the three different processes.

Three of the dignitaries at Philadelphia. Left to right: **Thomas R. Smith**, superintendent of dyeing, Wiscassett Mills Co., Albemarle, N. C., president of the Association; **Louis A. Olney**, Lowell Textile Institute, president-emeritus and chairman of the research committee; and **Kenneth H. Barnard**, director of product research, Pacific Mills, New York City, chairman of the intersectional paper contest . . .

# Chemists and Dyers Hear Contest Papers in Philadelphia

## New York, New England and Philadelphia sections win intersectional honors

IN LIEU of the annual national convention, scheduled for Atlantic City and cancelled at the request of the Office of Defense Transportation due to the war-time transportation exigencies, the American Association of Textile Chemists and Colorists conducted its intersectional paper contest at the Hotel Philadelphian, Philadelphia, Pa., on October 9. The Philadelphia section of the association held its own fall meeting on that date, and through its courtesy, the contest was conducted during its sessions.

This contest, originated three years ago, comprises entries made by each of the association's eight regional divisions, consisting of a technical paper prepared and presented under the auspices of each section. Kenneth H. Barnard, director of product research for Pacific Mills, New York City, was chairman of the committee handling the contest, and presided when four of the entries were presented at an afternoon session, and the other four at the evening session, held during the banquet of the Philadelphia section.

In the contest, each section furnishes a judge, with Louis A. Olney, president-emeritus of the association and chairman of its research committee, acting as "chief justice". The judges this year were: South Central, A. H. Gaede; Southeastern, Robert W. Philip; Piedmont, Arthur R. Thompson, Jr.; Northern New England, A. H. Sampson; Rhode Island, Raymond A. Pingree; New York, Henry F. Herrmann; Philadelphia, Professor Theel; Midwest, W. A. Stringfellow.

The titles of the papers, and the names of those presenting them in behalf of the sections, follow in the order of their presentation:

*Midwest*, "Training Dye Plant Workers in the Present Emergency," presented by W. A. Stringfellow. *South Central*, "Effect of the Present War on the Hosiery Dyehouse", presented by W. J. Harrison. *Southeastern*, "Effects of Extracting and Drying Raw Stock Dyed Cotton on Carding and Spinning Qualities", presented by Laurie E. Whittelsey. *Northern New England*, "Evaluation of Light Fastness by Means of a Spectro-Photometer", presented by Edward S. Chapin. *Philadelphia*, "Value of Laboratory Tests in Predicting the Color Fastness Performance of Dyed Textiles", presented by Pauline Beery Mack. *Rhode Island*, "Impact of War-time Requirements on Post-War Finishes", presented by Herbert S. Travis. *New York*, "Calibration of Fadeometers", presented by P. J. Wood.

The judges considered the papers on the basis of originality, discovery, technical value and presentation. The results of the voting, announced by Professor Olney on Saturday morning were: First award, New York section; second award, Northern New England section; third award, Philadelphia section. All eight contest papers will be published in the December 8 issue of the *American Dyestuff Reporter*, official organ of the association.

During the banquet on Friday eve-

Here are the winners of the first and second prizes in the intersectional paper contest, in action. At left, **P. J. Wood**, of Royce Chemical Co., delivering the paper of the New York section, which took first prize. At right, **Edward S. Chapin**, president, The Deltex Co., presenting the Northern New England section paper, which took second prize, with **John F. McCoy**, Edgewater Dyeing & Finishing Co., holding the exhibit for him . . . . . .

ning, Major Frank M. Steadman, in charge of research and development, Philadelphia Quartermaster Depot of the U. S. Army, spoke on "Textiles in War". James P. Conaway, of Delta Finishing Co., Philadelphia, was announced as the new chairman of the Philadelphia section. Boyce C. Bond was re-elected secretary, and George E. Kahn treasurer.

On October 10, the usual meeting of the Association's council and research committee was held, presided over by Thomas R. Smith, of Albemarle, N. C., president of the association.

*Snapshots at Philadelphia by Robert W. Philip.*

Participants and others at Philadelphia. Top row, **Past-President William H. Cady** listens intently as **Pauline Beery Mack** delivers the paper of the Philadelphia section, which won third prize in the contest; **Raphael E. Rupp**, superintendent, Pacific Mills, Lyman, S. C., delivering the Piedmont section paper; **Herbert S. Travis**, Rohm & Haas Co., Providence, reading the Rhode Island section's entry.

Second row, left to right: **Laurie E. Whittelsey**, of Southern Dyestuff Corp., Macon, Ga., presenting the paper of the Southeastern section; **W. A. Stringfellow**, of Ciba Co., Inc., Philadelphia, making a point in his delivery of the Midwest section paper; **W. J. Harrison**, chief chemist, The Trion (Ga.) Co., presenting the South Central section paper; and **Major Frank M. Steadman**, of the Philadelphia Quartermaster Depot, speaking at the banquet.

Third row, left to right: "**Prof.**" **Albert H. Grimshaw**, of N. C. State Textile School, Raleigh, N. C., emphasizing a point to **Hugh Christison**, chemist, Arlington Mills, Lawrence, Mass.; **Ben Verity**, Carbic Color & Chemical Co., Providence, R. I.; and **Harold C. Chapin**, of Lowell Textile Institute, secretary of the association

# CURRENT TEXTILE TOPICS

## New stimulus for the mills

REQUESTS for heavy amounts of cotton goods began to come from the government late in September, after a hiatus of about four months in which the biggest buyer was largely absent from the market. The total of requests was figured as close to 200,000,000 yards, about half for bids around the middle of October and the remainder for bids to be opened on October 29.

This business, the first big commitment since May, led mills to gear up activities even before the opening of bids. The October 29 bids called for 98,500,000 yards of various twills, mostly khaki uniform cloths but including 7,000,000 yards of khaki lining cloth and 6,500,000 yards of olive drab silesia. In it many saw the beginning of a procurement program to make the current fiscal year overshadow 1941-1942 in aggregate.

Major calls in the mid-month bids were for drills, uniform cloths, canvas padding and balloon cloth, with smaller demands for printcloths and sheetings. There was talk in the market of expected new substantial needs in cotton ducks, possibly 40,000,000 yards, which would be secured by extension of contracts. Other items in extended contracts led to estimates of 300,000,000 yards or so to be supplied.

## Pressure on mill capacity goes on

Manifestly the mills of the country are facing an unrelaxed pressure upon their capacity, which has been put to an extraordinary test since 1940. The manufacturing problem becomes constantly more serious, however, both because of the way that machinery has been taxed through constantly heavy operation the past two years and the steadily increasing war demands upon manpower of the nation.

For nine months of 1942, reports the president of the Association of Cotton Textile Merchants of New York, W. Ray Bell, operations of cotton mills have been about 100 billion spindle hours. Assuming the same relationship to cloth yardage as prevailed last year, it is calculated that production has exceeded 9,300,000,000 square yards of woven cloth. He estimates a new, all-time record in 1942 of approximately 12,500,000,000 yards.

At the same time, Auguste Richard, vice-president of Pacific Mills, voiced the conclusion that the cotton-textile industry had during the past few months reached a "peak production which is not likely to be maintained." Among reasons cited were that mills cannot continue to drive their equipment at the pace of the past year without damaging the now irreplaceable parts; the supply of textile operatives is diminishing; the interplay of price ceilings, increased costs of production and high corporate taxes will reduce the incentive for maximum production.

## Civilian lines due to suffer penalty

War economy has produced many a conflict of interests and the cotton industry is reaping its share. Lew Hahn, general manager of the National Retail Dry Goods Association, points out the need to step up production of civilian goods as a means of preventing inflation. But it is obvious that war needs will be filled first and from many sides the conclusion is that civilian goods will be curtailed because of the circumstances mentioned above.

Already secondary markets have been disappointed with supplies for ordinary civilian needs. Throughout the year the mills have been allotting goods as fairly as they could, on a percentage basis to large and small buyers. The "rations" have diminished until in some cases they are reported nearly at the vanishing point. Some secondary distributors have reached the situation in which the only hope apparently is to convert to government business in lieu of quitting.

Militating further against the prospect of production for civilian trade requirements is the complicated situation in price ceilings. At the time of writing the government program on a ceiling for raw cotton was not clear and the possibility existed of conditions upsetting to the mills in the spring. In other words the outlook for any profit under the ceilings for goods and uncertainty over raw cotton was such as to destroy incentive for production on civilian lines.

## Apathy shown toward post-war trade plans

Much talk of plans for the post-war period has been heard in recent months, from the economic angle as well as the political. This has not been widespread in the cotton industry, apparently, unless it be in the case of exporters who are doing business under difficulty and so are laying plans for the future.

Cotton-textile exporters recently were reported to be holding their organizations against an expected world-wide shortage after the global conflict. They see high sales and profits, with price regulation abandoned and foreign competitors in a difficult position for restoring their world markets.

Whether typical of the whole cotton manufacturing industry or not, the consensus of Rhode Island mill men seems to be that post-war planning is not for current consideration. They agreed with the suggestion arising elsewhere that it might be wise to lay plans for peace so far as it could be done without detracting from the war effort. But the idea evidently prevailed that a war for survival was an all-absorbing matter.

## New England Mill Situation

FIGURES on September consumption of cotton by the mills of this district were somewhat more favorable than those of August. The improvement was not general among the states of New England, however, and in Maine there was again a loss in relation to the same month of last year. This left a small net gain for the section.

Consumption in New England was 103,186 bales for September, against 101,195 in the same month of last year. Significant of the production problem under increasing pressure of war is the fact that the first two months of the cotton year registered a consumption of 200,219 bales, against 201,988 bales in the same period of last year, or before our entrance into the conflict.

Massachusetts consumed 54,048 bales in September, against 52,105 a year before; New Hampshire 13,292 versus 12,623; Connecticut 7,623 versus 7,521. Considering how the industry has been stepped up by war, however, these gains are meager. Rhode Island showed an unchanged total of 11,297 bales, while Maine dropped from 17,200 bales last year to 16,688 in September, 1942.

Advices from Washington indicate that maintenance of the extraordinary rate this year achieved by the mills is essential. The plans for prosecution of

# SHOULDERS

*to the wheels of*

# WAR

*On completing his round-the-world tour of war zones, Wendell Willkie rendered a report to the people. In it he said: "America's vast reservoir of good will is being seriously drained by our failure to fulfill war promises to our allies."*

Smoother, speedier production of war materials will help check this drain. It is essential if we are to win the war and the peace.

Southern industry — whether making planes or garments — has a great obligation in the task ahead.

By supplying the needed liquid working capital and assuming the credit risks, our Factoring Division helps YOU get ACTION.

We can alleviate your financial worries . . . so that you may concentrate on speedier production. Communicate with —

*Factoring Division*

**TRUST COMPANY OF GEORGIA**

**WA-1671 — ATLANTA**

the war on an expanding scale will call for increased amounts of the essential cotton goods to that end. This is reflected, moreover, in recent requests from the Government buying agencies and intimations that this fiscal year will run ahead of last.

While the mills of New England were able to adjust themselves to the extraordinary conditions of the past 11 months or so, they now face severe problems in maintaining the new order because if this is accomplished it must be in spite of further adjustments. The relative loss of output in Maine, for example, points to inroads of shipbuilding plants upon mill workers.

If the armed forces are recruited up to 10 million men, let alone the suggested 13 million, it is obvious that mills will be hard put to hold workers aside from the diversion to other industries. Estimates are that as high as 85 per cent of the mill jobs might be done by women, but holding production in the period of transition will be a grave problem.

### Machinery and price problems also faced

As set forth by Russell T. Fisher at the annual meeting of the National Association of Cotton Manufacturers, there are severe mechanical and price problems also besetting the mills. Present equipment will have to be made to do, as the textile machinery manufacturers will be pressed to meet the demand for repair parts on the limited production allotted to textile machinery.

Fair and equitable price ceilings are a continuing unsolved matter. Northern mills are suffering from lack of allowance for increased cost due to conversion for war production and to higher labor and materials charges The existing ceilings make imminent, if not already fact, discontinuance of some fabrics that mills have been best equipped to make and possibly the actual shutdown of some equipment that could be used for civilian goods.

### Uncertain prospects for civilian lines

Some apprehension has been apparent over the possibility of government action for control of production along the line of the "nucleus" system adopted in England. The hope has been expressed that, if those who have studied the British system believe it necessary to make an experiment in this country, they will not begin with the complicated and vital cotton industry.

Through this whole situation the matter of meeting civilian trade demands naturally has been secondary and the prospects on that side are steadily more uncertain. War demands will be met, whatever the forthcoming adjustments of workers and equipment may be. What can be produced beyond government needs will have to suffice for civilian requirements.

By and large it appears that 60 to 65 per cent of the mill output is going to military uses. But in view of the tremendous increase of output, that does not mean a reduction of civilian lines to 35 or 40 per cent of normal. Rather the supply is estimated by Mr. Fisher around 70 per cent of normal on the pre-war basis.

Buyers, however, are continually in trouble over getting what they want and sometimes mystified at the lack of supply. Fine goods mills have been rationing their available output for civilian trade, but many buyers have complained of getting practically nothing over long periods. The matter of distribution appears to have been greatly confused, particularly in the field of civilian supply.

# "THE SITUATION" as Seen Across an Executive's Desk

**October 19, 1942**

### The Labor Situation

IT HAS BEEN estimated by many people that it requires from 5 to 15 workers in civilian life or war work to keep one man in the fighting line. Taking the median estimate of 10 men at home for one in military service, an army of 7,500,000 men would require 75,000,000 people at work. As the ratio becomes larger the workers required grow by the millions. With an army now of 4,500,000 men there are 57,000,000 workers employed.

There must be a balance between workers who are able to furnish the necessities for our fighting men and the armed forces. There must be a balance between what we can furnish lend-lease and support our own civilian population.

There must be consideration given to the producers of agricultural products because the ever-increasing drain on their labor by the draft and the higher-paid war industries is leaving them without workers to make or harvest the crops, and food and clothing are two of the big essentials.

Already this fall, the harvesting of the cotton crop in the South has been and still is a serious problem. The press recites disturbing stories from the dairy sections. The cattle and hog areas tell their story of labor and feeding shortages.

More hours of work and more manpower are beginning to cry loudly for attention. It is true that women are loyally stepping in and filling up the gaps made vacant by men but it is still true that there are so many jobs that only men can fill.

It seems that the work day must become longer and this remedy presents its troubles. Overtime is prohibitive in many industries due to the fact of increased cost of raw material, increased wages, new taxes, operating under ceiling prices. Union contracts, increased absenteeism due to longer work week, fatigue, decrease production on a relative basis.

It seems, however, that at least two things can be done that will assist. One is that the work week can be extended to 48 hours before overtime begins. This has been tried out in many nations and its efficiency is well established in our own. Labor can work efficiently in most plants 48 hours per week without any harm.

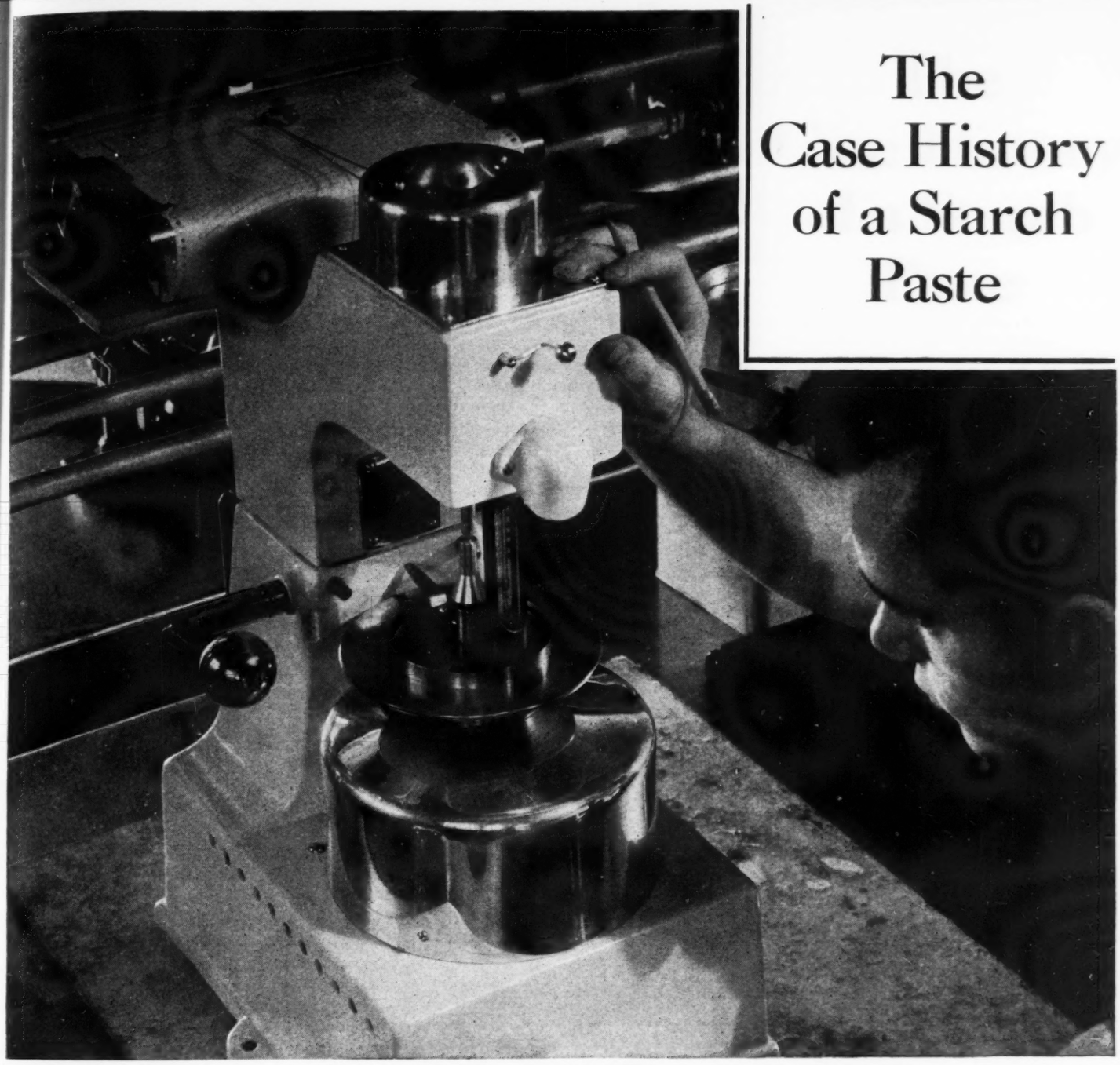
The second thing to do is exercise some control over the location and work of people who are able to produce. They must be stabilized on the job and in the areas where there is the greatest need.

### The Farmer and His Problem

The press, the public and the politician, in a large part, lambasted the farmer unjustly in his recent fight for a place in the economy of this nation.

The government fixed its ceilings, taxes, labor policy, wage standards and then left the farmer and the manufacturer in the cellar to try to figure out a plan of economic livelihood. The farmer and the manufacturer are related by blood and by neighborliness. If the farmer got his just reward, the manufacturer would lose his. If the manufacturer got his, then the farmer would go back to peonage and poverty.

The manufacturer was and is willing for the farmer to have fair treatment and to enjoy his parity prices whatever it may be regardless of his position. We must have food and clothing. It seems that the government worked from the top down when it should have worked from the bottom up. With farmers paying from $2.00 to $2.50 per hundred for cotton picking in the heavy cotton producing areas, it is easy to see that labor costs are a se-



# The Case History of a Starch Paste

**AMYLOGRAPH** — The Amylograph accurately measures physical changes and the energy involved in the cooking of starches and starch mixes. Viscosity changes for a definitely controlled rate of temperature increase are recorded. An outstanding feature of this Amylograph is a specially-designed thermostat which makes possible the selection of different temperature increase rates. The results of a test are automatically recorded for immediate observation and for a permanent record on a synchronized chart.

**NO MARGIN FOR ERROR** — The slightest error in laboratory research may be amplified to the difference between success and failure in plant operation. No margin of error in laboratory technique can be tolerated if the results of research are carried into plant procedure.

The Rohm & Haas laboratories appreciate the importance of accurate observation. Laboratory workers are trained to detect the slightest inaccuracy in test results. Automatic testing equipment is available to measure differences which are beyond human measurement.

**TRITONS**–*Synthetic detergents, emulsifying, wetting, and dispersing agents.*

**RHOTEXES**–*Synthetic gums for sizing and thickening.*

**DEGOMMAS**–*Concentrated diastatic and proteolytic enzymes for desizing.*

**RHOPLEXES**–*Aqueous resin dispersions for finishing and coating fabrics.*

**RHONITES**–*Modified urea formaldehyde resins for textile finishing.*

**PROTOLIN**–*Stripping agent for wool stock and piece goods.*

**FORMOPON**–*Reducing and stripping agent in acid systems.*

**LYKOPON**–*Reducing and stripping agent in basic systems.*

# ROHM & HAAS COMPANY

*WASHINGTON SQUARE, PHILADELPHIA, PA.*

Manufacturers of Leather and Textile Specialties and Finishes.. Enzymes.. Crystal-Clear Acrylic Plastics.. Synthetic Insecticides.. Fungicides.. and other Industrial Chemicals

rious problem for the farmer. The original producers must be preserved and given their fair return comparable with others.

## The Executive Order on Overtime Pay

The Secretary of Labor, in handling down the first official ruling on the recent executive order on overtime pay, has limited its application to prime contractors, subcontractors, and materialmen working on Government war contracts. The Secretary ruled that all production, maintenance, and office employees working on Government war contracts are covered, but executives and supervisory employees, where compensation is not based on time worked, are excluded. The following regulations supplement the three basic provisions of the order:

(1) The double time requirement for the seventh consecutive day of work is subject to one exception. Where there is a mutual agreement between an employer and his employees for one day off within the regular scheduled workweek (a regular workweek is defined as seven successive days beginning on the same calendar day each week), double time need not be paid for work on the seventh successive day.

(2) Time and one-half may be paid for the sixth consecutive day of work if required by an employment agreement even though the total hours for the week do not exceed 40.

(3) Regardless of how much time an employee works in one day, whether one hour or 10 hours, he is considered to have done a day's work.

(4) In figuring the sixth or seventh consecutive day of work, the six holidays enumerated in the order must be treated as days worked whether or not work is actually done or compensation paid on those days.

(5) Where certain work is subject to more than one rate under this order—e.g., time and a half for holiday work and double time for work on the seventh consecutive day — only the highest rate need be paid, not both.

## Permissible Wage Raises

The recent executive order provides that wage increases may be approved by the War Labor Board only to the extent necessary to: (1) Correct maladjustments or inequalities; (2) Eliminate sub-standards of living; (3) Correct gross inequalities; or (4) Aid in the effective prosecution of the war.

William H. Davis, chairman of the Board, has interpreted these provisions as permitting the application of the "Little Steel" formula with its adjustments for "cost-of-living" increases, sub-standard wages and inequalities.

The War Labor Board has handed down decisions indicating three types of wage differentials, outlining the term "inequalities". They are: (1) Unusual or unreasonable jobs in the same plant; (2) Differences in rates paid for comparable jobs in the same locality; and (3) Wage differentials for comparable jobs in the same industry.

The differential must be unusual to constitute justification for a wage increase. For the reason that the North-South differential was not shown to be unusual, the WLB declined to grant any request for its modification or elimination.

The War Labor Board, in its raise of 4 cents per hour to the laborers in General Motors, in discussing the differences in rates between those in General Motors and Ford and Chrysler (it was developed that Chrysler rates are still higher than the other two), made the following comment:

## Differences Do Not Show Inequalities

"It should be pointed out that differences in rates are not necessarily inequalities in rates. On the contrary, the wages paid in American industry are normally characterized by all sorts of differentials created for many different reasons. Under any sound program for stabilizing wages in this time of war it must be presumed that well-established differences in wages are not inequalities.

"One must not interpret the above-stated presumption, however, as an indication that established differences in wages can never become inequalities. They may be subject to adjustment if they become inequalities which must be rectified in the interests of full production of war goods. The point is, however, that a showing of an inequality in wages requires much more than a showing of differences."

## Byrnes, the Deputy President

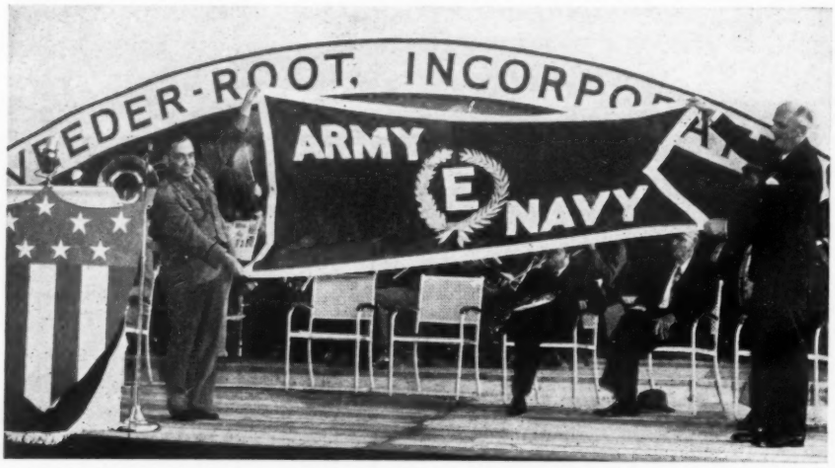
Justice James F. Byrnes, who stepped down from the dignified and honorable Supreme Court to serve as chairman of the Economic Stabilization Board, won the admiration of the nation in his desire to serve unselfishly the best interests of his country.

Perhaps the President has made no appointment that has met with as much public acclaim. Mr. Byrnes' former leadership in the Senate indicated his ability, his character and his devotion.

This is one of the most responsible offices in the nation. The new chairman will take up his duties with zeal and intelligence. He is well balanced politically and enjoys the confidence of all people. His friends in the South are particularly well pleased over his appointment. He knows the South and its problems. He will require no education on problems affecting this area. He steps into a position crowded with important and difficult problems, but he will work them out for the best interests of the nation as he solves them.

## Tax Prospects

The more Congress discusses new taxation, the surer the American people may be that they have seen nothing yet of reaching down into the bottom




A LARGE number of concerns serving the textile industry have been recipients of the Army-Navy "E" award for "high achievement in the production of war material". Many of these normally engaged fully on textile equipment and supplies, have converted in whole or in part to products directly for the war effort. Others, normally producing industrial products are likewise concentrating upon war materials.

Representative of this group of allied industries receiving the award is Veeder-Root, Inc., Hartford, Conn., manufacturers of counting devices. The award was made by Colonel Conrad E. Snow signal corps, Army of the United States, representative of Under Secretary of War R. P. Patterson and Under Secretary of the Navy James V. Forrestal. The award was accepted for the company by President Graham H. Anthony. The individual "E" badges, to be worn by each employee of the company, were presented by Lieut.-Commander George N. Robillard, U. S. Naval Reserve.

# Tents Stand Up in Combat, Field Armies Report

On the desert . . . in the tropics . . .

In sand storms . . . in driving rain . . .

Tents made for the Army by the Textile Industry are "standing up well in actual combat."

So say the men of the Quartermaster Corps who are serving at the front.

Government demand for cotton duck is practically unlimited. Recent bid invitations call for materials for tents, leggings, hammocks, stretchers, gun covers, life rafts, gas mask covers.

In the bleaching, dyeing and finishing of the finest cotton duck Butterworth Machines have an important role to play.

On the application of water repellents alone, Butterworth Jiggs, Padders, and Compartment Machines have a full-time job to do.

Because of the tremendous strain placed on mechanical equipment by today's unprecedented demand, mill superintendents are on the alert to detect the first sign of let-down in quality or quantity of production.

The Butterworth Organization is at your service to help you to improve, repair or replace obsolete equipment to the best of our ability.

Let our experience serve you now.

H. W. BUTTERWORTH & SONS CO.
Phila., Pa. Serving the Textile Industry since 1820
Offices in Providence, R. I. and Charlotte, N.C.
In Canada: W. J. Westaway Co., Hamilton, Ont.

***64%**

**of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.**

*Proved by Research

**Butterworth**

**PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY**

of the barrel and digging up their earnings, and, perhaps, even their savings, and tendering them to the Government for war spending.

The country is already paying a $16,000,000,000 tax bill.

The new measure going through Congress now will add between $8,000,000,000 and $10,000,000,000 more to the national revenues, and Secretary Morgenthau is proposing that Congress also go to work on still another measure that will provide at least $6,000,000,000 more to be added to the top of all that has gone before—a total of $30,000,000,000 in taxes.

And that, roughly, will represent between a third and a fourth of the total earnings of the American people, which are expected to be around $115,000,000,000 next year.

## The Unions

There are three main contentions by employers who have unions in their plants and by those who think squarely regardless of whether they are likely to have unions.

The first demand is the unquestionable assurance that the civil and democratic rights of union members shall not be abridged by union bosses with dictator attitudes. It is a well known and recognized fact that some union officials are supreme dictators. Public filing of its constitution and by-laws will show whether the union is democratic.

The second contention or demand is that unions shall lessen their political activities. Labor is strong in its influence with government. No one objects to a legitimate interest in and a reasonable political interest in government but labor is now so strong that many feel with its numerical threats and dictator methods it sometimes whips the Congress into an unreasonable attitude.

The third and most important demand made by business upon labor is that it shall meet its obligations—it shall execute its contracts in good faith. It wants an agreement to be an agreement and not simply an excuse for constant misunderstandings and bickerings.

The employer is responsible and operates under law. The unions do not operate under statutory law but under common law and it is not always easy to determine what is a valid agreement.

## Prices

There are several things in the offing bearing upon the subject of prices that are very disturbing.

One is the direct and overt act of OPA to scale certain prices on textile products downward after having made a study of certain factors pertaining to costs.

Certain yarn prices were moved down, denims and other fabrics were lowered in price and the end is not yet. Such acts are very demoralizing to the trade and in many instances unfair to the manufacturers because practically all costs have risen since ceilings were established and the tax law shouts its demands so loudly that even a theorist can see its effect. The farmers must not be penalized. Business must make a profit, and payment of taxes to carry on the business of the nation and its war must be available.

Again, Section B, 403 of Public Law 528, providing for the re-negotiation of contracts with the Army, Navy, and Maritime Commission is now being reconsidered by a sub-committee of the Senate Finance Committee. This law was hurriedly written and although some contracts were awarded on an excessively high price basis, the present law, as written, seems unjustified. No financial statement can be made without considerable reservations for uncertainty and earnings, if any, can not be distributed because of the possibility of recapture within three years after the war ends.

The provisions for an amendment should be carefully considered and some dependable protection given.

## The Scrap Drive

This drive for scrap metal is a serious effort. Consumption of steel is evident in the demands caused by the wreckage of war and the need for replacements.

There are so many drives and demands that some people may not take time to decide which are more important than others. This is a mechanized war and steel is a vital demand and necessity.

Around every textile mill in the South there are tons of old machines and scrap that will likely never be worth anything to the mill. It is valuable in the war effort. Only recently a newspaper report recorded the fact that one plant sold nearly two million pounds of scrap to a dealer collecting this material for the war needs.

It is necessary in peace time to have scrap to mix with ore iron in order to get best results.

The mills have been patriotic and loyal in every demand made upon them so far, hence they can not be indifferent to this. Hundreds of mills have responded but there are a few that have not yet sensed the dire need for meeting this need.

There are many dealers to purchase it at the established price. Now is a good time to clean up and to be patriotic at the same time. The nation needs this material, therefore, all mills should consider this call seriously.

## A Review of the Cotton Waste Market

**Boston, October 16, 1942**

IMPROVEMENT has been general in cotton waste since last writing and it is now apparent that the long decline has ended and a good solid foundation has been formed. The maret as a whole is on a much firmer basis than for several weeks past. Business continues scattering. There is no great urgency to the buying and any attempt by sellers to get higher prices is met by resistance.

One reason why consumers who still have business are so slow in placing orders is that they feel the market cannot get away from them and that whatever may happen to cotton, its wastes and by-products, by reason of the heavy output, will continue for some indefinite time fully in the buyer's favor. The effect of the war economy on the cotton waste trade has been to greatly increase the supply of wastes and at the same time to close down to a very considerable degree outlets for the wastes and by-products of the cotton spinning industry.

Woolen mill business for soiled cards has not developed to any extent and available supplies are said to be quite small. Oily cards on the other hand are accumulating. Those interested in this type of waste state that it does not pay to sort out the good white soiled card.

Comber continues perhaps the chief problem from the selling standpoint. There is a large supply of this waste and the absorption is very restricted. The price holds fairly firm despite the small business being done at the consuming end. There is some hope that new uses for cotton may be found. This received some confirmation at the annual meeting of the National Association of Cotton Manufacturers held in this city recently where claims were made for a fabric which in its construction and texture approximated that of wool. In such a cloth a percentage of choice comber waste might be just the material to fit in.

A better demand is seen from the bedding and batting trade for picker and fly with prices paid edging toward the high point of quotations. More interest is seen in No. 2 upland strip and in white vacuum strip. Bedding manufacturers are experimenting with strips and high grade picker, hoping thereby to produce a good solid mattress, now that it is no longer allowable to use metal springs.

Waste traders are finding the going a little easier, now that consumers are about convinced that there is little likelihood of any further yielding in waste prices. Choice materials led by peeler strip sell at top prices but average to off grades, while on a bed rock bottom, are less promising as to any immediate enhancement in value. The market here has developed a more confident attitude and in its buying and selling tends to overlook the heavy mill stocks as no longer a dominant factor in the merchandising of cotton wastes.

# What the Textile Mills Are Doing

Canadian U. S. Knitting Co., St. Hyacinthe, Quebec, manufacturers of knitted piece goods, overcoating materials, etc., has authorized plans for a new addition, consisting of a two-story building approximately 30x65 feet.

A controlling interest in the American Yarn & Processing Company, operating five combed yarn mills and a yarn finishing plant, has been acquired by R. S. Dickson & Co., Charlotte, N. C., investment bankers. Operations will be continued under present management by the new owners.

Western Canada Cordage Co., Vancouver, British Columbia, has plans for a new spinning unit near Surrey, B. C., consisting of a main one-story unit and auxiliary structures, at a cost of approximately $100,000 including equipment.

New Canebrake Cotton Mills, Uniontown, Ala., operated by the California Cotton Mills Company, have awarded general contract for a one-story addition. Robert & Co., Inc., Atlanta, Ga., are the engineers.

Amazon Knitting Co., Muskegon, Mich., manufacturers of knitted underwear for men, women and children, have announced plans of discontinuing operations, through difficulties brought about by war conditions.

Sanco Piece Dye Works, Inc., Garnerville, N. Y., has acquired the former mill of the Standard silk division of A. D. Julliard & Co., at Phillipsburg, N. J., and will modernize it at once as a new branch plant.

Chadwick-Hoskins Company, Charlotte, N. C., is completing the installation of additional equipment in the No. 4 Mill, on fine combed lawns, including long draft spinning equipment throughout the spinning division.

Grace Cotton Mill Co., Rutherfordton, N. C., has awarded contract to Fiske-Carter Construction Company, for a new one-story mill addition, including alterations and improvements in the existing plant.

Southern Cotton Co., 50 Beaver St., New York City, has leased the mill of the Aponaug Company at Meridian, Miss., and operations will be continued under C. D. Kent, superintendent.

Buildings formerly occupied by Pacolet Knitting Co., Lynn, N. C., have been sold to a new concern for manufacturing tent cloth, belts and parachute straps for the government.

Shannon Hosiery Mills, Columbus, Ga., have recently installed additional fine-gauge machinery especially equipped for the manufacture of rayon full-fashioned hosiery.

Mason Knitting Co., Acton, Ontario, manufacturers of knitted underwear, has plans for a one-story addition to the mill.

### Patents to Carolinians

Eaton and Brown, patent attorneys, Charlotte, N. C., report that recent patents to Carolinians include the following:

Joseph C. Cobb and Eugene P. Floyd of Tucapau, S. C., were awarded a patent on an improved bobbin receptacle for looms. This receptacle is designed with a view to facilitating the collection and reclaiming of empty bobbins which are expelled from the shuttle box during weaving. It comprises a detachable receptacle adapted to be swingably secured to a loom frame and also adapted to be normally disposed beneath the loom shuttle box. When filled with empty bobbins, the receptacle is swung about a vertical axis into the loom alley where the bobbins are easily removed. During normal operation of the loom, however, the receptacle is releasably locked beneath the shuttle box in an unobstructing position relative to the loom alleys.

T. R. Nix and J. H. Calvert, of Una, S. C., and Spartanburg, S. C., respectively, were awarded a patent on a dagger depressing mechanism for looms. During normal operation of a loom, the shuttle is often improperly boxed at the ends of its travel, and therefore cannot be properly directed again through the warp shed until the loom is stopped and the position of the shuttle corrected. The new dagger depressing mechanism insures that the loom will be immediately stopped when an improper boxing occurs. Specifically, the structure comprises an adjustable spring-pressed plunger carried by the loom lay for normally depressing the free end of the dagger. When the shuttle is improperly boxed, the spring-pressed plunger is permitted to urge the dagger into engagement with the loom stop motion to cause immediate stoppage. This patent has been assigned to the Bahan Textile Machinery Co., Greenville, S. C.

### Cotton Goods Production

A new all-time production record of approximately 12,500,000,000 square yards of woven cotton cloth for the calendar year 1942 is anticipated by the Association of Cotton Textile Merchants of New York, according to a statement by W. Ray Bell, president of the organization. Such volume would exceed by more than a billion square yards the War Production Board's estimate for last year (11,328,000,000 square yards). It is 4,000,000,000 square yards more than the average annual pre-war output from 1935 to 1939 inclusive.

According to Mr. Bell, cloth production can be measured fairly accurately by the spindle hour activity of the industry as reported monthly by the Bureau of the Census. For three quarters of this year, total operations have been around 100 billion active spindle hours. Assuming the same relationship to cloth yardage as prevailed last year, it is calculated that production exceeded in the first nine months 9,300,000,000 square yards of all types of woven cloth.

Cotton consumption for the nine months exceeds 8,500,000 bales and should approach a total of 11,400,000 for the entire calendar year. This would mean a yearly gain in mill consumption of more than one million bales over the previous peak of 1941, since relatively little cotton is currently going into the Government's mattress program, which used 320,000 bales last year. The pre-war (1935-1939) average consumption was 6,689,000 bales.

"The remarkable thing about this high rate of cotton-textile productivity," said Mr. Bell, "is that it has been accomplished concurrently with a substantial decline in facilities. At the beginning of 1936 there were 29 million spindles in place; today, less than 24 million. The chief problem, however, is that of maintaining third shift operations at a time when manpower is being sought by everybody.

"The production gains are largely concentrated in fabrics directly related to war necessities and some product divisions will share relatively little, if at all, in the increased volume. More and more, the character of overall production is being determined by the perspective of war agencies. Chief example this year has been a substantial diversion from certain apparel and household goods to sheetings and osnaburgs for use in the fabrication of agricultural bags, sand bags and other uses formerly supplied by jute burlap. Military and naval requirements for twills, drills and duck have been exceptionally large and prominent in the preferred classifications of product."

# TIMELY NEWS ITEMS with a TEXTILE SLANT

**Lieut. (j.g.) John Wilmerding,** U.S.N., formerly with the New York office of the American Viscose Corporation, has been reported to the Navy Department, Washington, D. C., by the commanding officer of his ship for outstanding performance while on duty and bravery under fire throughout a naval engagement.

**Gordon MacDougall** has joined the staff of Impregnole Corporation, New York City. He has been connected with Talon, Inc., and previously was engaged in advertising and publicity work. He is a graduate of Princeton University.

**Karl Oliven,** formerly manager of the Greenville plant of Gaylord Container Corporation at Greenville, S. C., has been transferred to other duties and has been succeeded as manager of the Greenville plant by **James C. Monroe.**

**A. E. Hitchner,** formerly manager of the Los Angeles office of the Westinghouse Electric and Manufacturing Company, has been appointed assistant to the manager of the company's industry sales departments with headquarters at East Pittsburgh, Pa., it is announced by **F. H. Stohr,** Manager.

**Charles C. Chamberlain** has been named general sales manager of Jenkins Bros., manufacturers of valves and other products. He has been publicity manager since 1940 and has been with the company since graduation from Hamilton College in 1929. His headquarters are at the general offices of the company, 80 White Street, New York City.

**Clifton E. Watson,** manager of southern sales for Emmons Loom Harness Co., Lawrence, Mass., and Charlotte, N. C., who in recent months has been serving with the War Production Board, has been appointed chief of the Textile Accessories Division of the Textile Machinery branch of WPB.

**Walter F. Daboll** has been named as southern representative of Watson-Williams Mfg. Co., with headquarters in Greenville, S. C., succeeding E. V. Wilson who has been called into Army service. Mr. Daboll, who has been with the company for 16 years, replaces Mr. Wilson for the duration of the War.

Mr. Daboll

**William J. Bieberle** has been transferred from the Philadelphia sales office of American Viscose Corporation to the viscose sales division of the company's New York office where he is in charge of viscose rayon yarns used for silk replacement under Government allocation. In addition he will continue his contacts with the hosiery trade in the Middle West.

**Ralph H. Brady** has been made manager of the Commercial Engineering Department of Westinghouse Electric & Mfg. Company's Lamp Division, Bloomfield, N. J. He succeeds **D. W. Atwater,** recently appointed manager of the new illuminating engineering department.

**S. H. Gorham** has been made manager of dealer sales of Allis-Chalmers Mfg. Company, according to announcement by **William C. Johnson,** general sales manager. Mr. Gorham has been identified with the company's sales organization since 1933.

## Power Saving Conference

The first power saving conference to be sponsored by a municipality was held in Reading, Pa., on October 8. It was attended by prominent engineers, industrialists and representatives of national industrial publications. The basis of the conference was the Gilmer National Power Recovery Plan of L. H. Gilmer Company, Philadelphia, described on page 108 of the July 1942 issue of COTTON.

## WAACs to Have Color-Fast Outfits

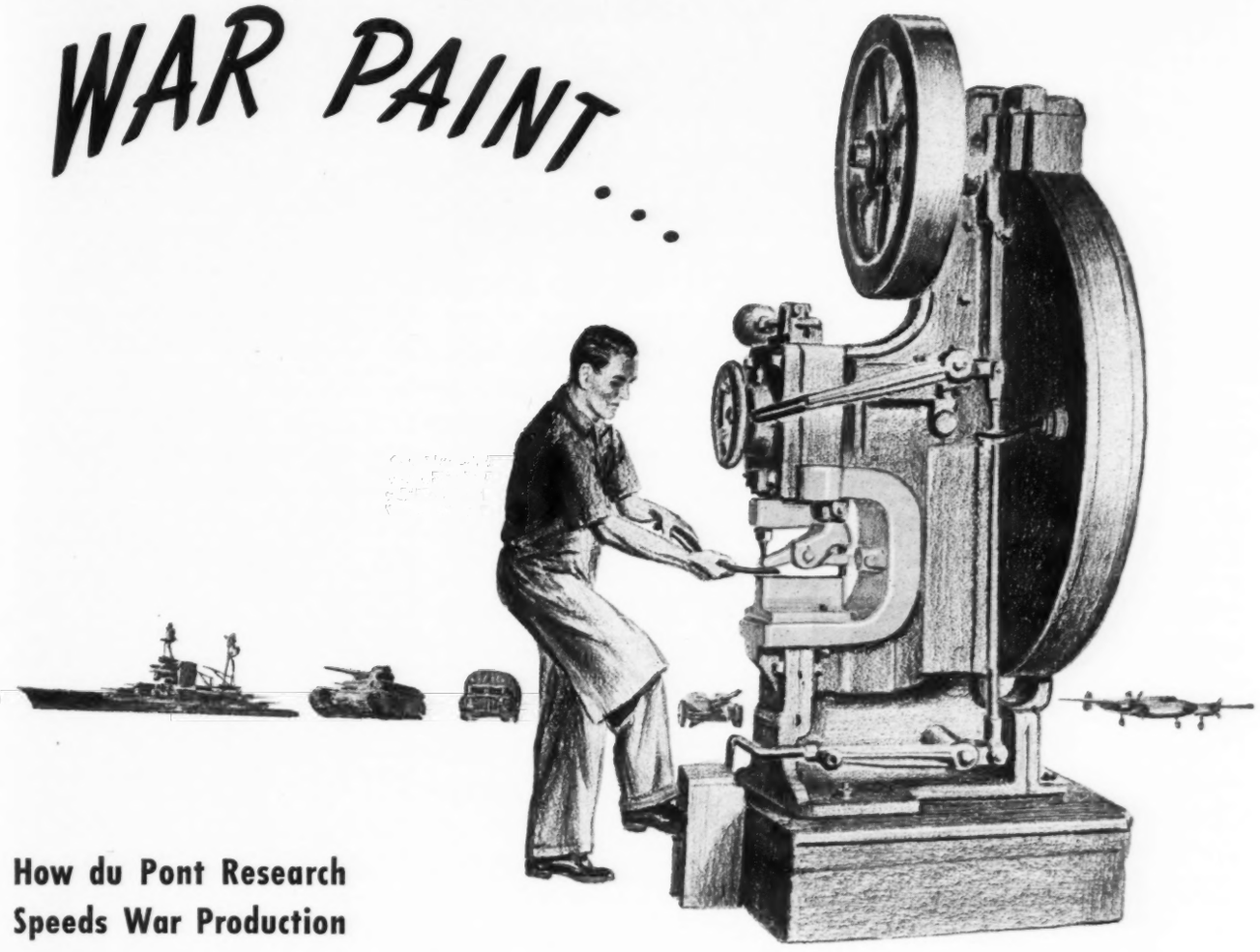
The cotton fabrics going into the smartly designed wardrobes of the Woman's Army Auxiliary Corps will have color durability to a degree unbelievable in the days of World War I. For the WAACS' khaki uniforms, cover-all work garments and caps, their exercise suits, pajamas and bathrobes, the Government has specified vat dyes, the fastest colors known to science, which are now produced by the United States dye industry in plentiful quantities.

The fact that America is able to provide enough of these super colors to meet the demands of an unprecedented war effort represents an outstanding accomplishment in industrial preparedness. The struggling dyestuff industry of 25 years ago has been built up, step by step, to a top-notch rating, unsurpassed by any other country in the world.

To reach this goal, the du Pont company, for example, one of the first to enter this field during World War I, spent millions of dollars on research. The first four or five vat colors produced in America were developed by this company in 1919. Through the 1920's, constant research brought improvements in formulas, operating technique and apparatus. By 1930, the dye industry was well organized and efficient, capable of manufacturing large quantities of the fastest and finest dyes. Research continued through the depression years, resulting in a wider range of highest quality vat dyes and better methods of applying them.

**Harold B. Dohner,** president of Amalgamated Chemical Corp., reporting for the nominating committee of the Philadelphia section of A.A.T.C.C., at the meeting on October 3. Next to him is **Boyce C. Bond,** of General Dyestuff Corp., who was re-elected secretary of the section. At right, **James P. Conaway,** purchasin gagent, Delta Finishing Company, who was elected chairman of the section. Photo by Robert W. Philip.

# WAR PAINT...



## How du Pont Research Speeds War Production

WARTIME PAINTS are used on everything from planes and tanks to barracks and battleships. And the finish that's best for a dive bomber is nothing at all like the paint that's best for the bridge pontoons. Paint colors identify the warheads of torpedoes; designate shells and bombs. White war paint inside a combat tank helps the crew to see better. Camouflage paints must conceal tanks and guns, landing fields and barracks from observers in the sky. Not only that, but they must conceal them from observers who use telescopic cameras and color filters as well as their eyes. Wartime finishes made by du Pont include primer paints for steel aircraft runways, short-bake finishes for mobile equipment, primers for wooden motor truck bodies, waterproof finishes for military maps, stencil finishes . . . dozens of others.

Latest du Pont contribution to wartime finishing is "Three Dimensional Seeing"—new color science which helps speed production, reduces injury hazards and proves lighting efficiency.

Reports from the industrial front are enthusiastic! From an ordnance arsenal: "Fluorescent lighting plus the advantages of 'Three Dimensional Seeing' . . . production increased 10 to 15%." A typewriter company: "Encourages operators to keep machines clean . . . less tiresome on workers' eyes." A governor company—300 machines painted. A corrugating company—all machinery in the plant painted. An aircraft company—entire plant finished according to "Three Dimensional Seeing" principles. A pharmaceutical company — 100% adoption of the program.

The Society of Illuminating Engineers reports that an extension of the principles of "Three Dimensional Seeing" gives 100% increase in lighting efficiency without use of an extra watt of electricity!

* * *

*The Du Pont Technical Service man can help you in many ways, because he is backed by years of service to industry . . . years of experience and "know how" in solving difficult problems. Call on him when you need help. Every problem solved is one more step toward victory. E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware.*

DU PONT
REG. U. S. PAT. OFF.

*BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY*

**New Orleans, October 16, 1942**

# COMMENT on the COTTON MARKET

THE COURSE of the cotton market during the past month was irregular and was influenced almost entirely by developments at Washington. Passage of the anti-inflation law by Congress had but little influence on the market because of the uncertainty as to how the labor cost and ceiling sections will be interpreted by the administrator of the law. Press and private reports indicate the probability that no ceiling will be fixed on cotton until or unless the price rises high enough to adversely affect the cost of living. This, it was claimed, is the intent of the law. The price at which the cost of living may be affected was generally accepted as being 21.47 cents a pound the price used by the OPA in fixing textile ceilings. The OPA says the ceiling will not be changed.

The advance of a cent a pound in the loan rate and reduction of 210,000 bales in the Government's estimate of the crop proved helpful but was offset by hedging operations. However, hedging operations have been surprisingly small this season and have not had as much weight on the market as usual due largely to the increased use of the futures market by spinners protecting themselves against future developments. Spots are at the highest of the season.

Notwithstanding these developments, prices, as this is written, are about $2.00 a bale under those which prevailed at the middle of September. Tenders on October had a depressing effect on that month because the cotton tendered was mostly undesirable but did not affect other months. A few sales of October 1943 have been made at 14 to 16 points over July. The anti-inflation law raises the loan rate from 85 to 90 per cent of parity and provides that it shall include all cotton raised since January 1, 1942, and is to remain in force for two years after the end of the war. This provision of the law automatically raised the basic loan rate from 16.02 cents a pound to 17.02. The parity formula was not changed by the act and the September parity was announced as 18.85 which is the same as during July and August. The increased loan rate applies to differences in grade and location.

The CCC announces that farmers will be allowed to borrow on cotton stored on their farms by executing a chattel mortgage on their holdings but, as an inducement to put their cotton in warehouses, will be allowed 19 cents a bale per month storage for all cotton delivered to the CCC. The CCC has issued only one report on cotton loans tabulated this season. It shows loans on 160,944 bales tabulated to October 30. This is about four times as much as was reported to same date last year. The CCC is reported much behind in its tabulations and is now operating 24 hours a day in order to catch up.

There is much speculation in the trade as to what basis the price administrator will adopt in naming a ceiling for cotton if and when he determines to do so. The law provides that the increased cost of farm labor since January 1, 1941, must be taken into consideration in fixing a ceiling. This increase is believed to amount to about 1.6 cents a pound. On the other hand, the President has instructed that soil conservation payments of 1.2 cents a pound be deducted from parity or other figure used in calculating the ceiling. The farm bloc and farm leaders contend that soil conservation payments are not deductable according to law as these payments are for diverting former cotton acreage to soil building crops. Recent statements indicate that the Department of Agriculture contemplates asking cotton farmers to divert more of their cotton land to food and feed crops in 1943. In that event they will be paid a bounty for the land so diverted, it is claimed.

The crop reporting board reduced its estimate of the cotton crop as of October 1 from 14,028,000 to 13,818,000. Notwithstanding this reduction the condition of the crop was given as 80, the highest on record for this month and a yield of 285 pounds an acre was predicted. This yield, if it materializes, will be the largest on record. The Census Bureau reported 5,009,000 bales ginned to October 1. This was somewhat larger than expected but indicates that only 37 per cent of the crop was ginned to that date, based on the Government's estimate, compared with 45 per cent ginned to same date last year. The weather of October has been favorable and picking and ginning has made good prograss during this period.

The CCC, which has an offer to buy all long staple cotton, has raised its offer for the long staple growths of Arizonta, New Mexico and Southwest Texas from 39.75 cents a pound to 42.75 cents a pound. The increase was made to cover the increased cost of picking, it is claimed.

The Department of Agriculture says this is the most profitable crop raised since 1925 and predicts that it will bring the South, including the seed, between $1,432,000,000 and $1,530,000,000.

The Census Bureau reports 966,147 bales were consumed during September. This is a new high record for that month and compares with 877,971 bales consumed in the same month last year. The U. S. Bureau of Agricultural Economics predicts that domestic mill consumption this season will be 11,600,000 bales compared with 11,200,000 last season. No prediction is made as to the exports but these are generally estimated at around 1,500,000 bales. The Bureau also predicts that the carry-over at the end of the season will be somewhat larger than the 10,500,000 bales brought over from last season. The AMA has been a good buyer of cotton from the trade recently due to the fact that stocks held by the CCC are not wanted for export. This cotton is believed for export under the Lend Lease Program. The AMA is expected to be a large buyer for some time to come.

**CENSUS REPORT OF COTTON CONSUMED AND STOCKS**

| Consumption of Lint — Bales— | This Season | Last Season |
|---|---|---|
| In United States, September | 966,147 | 877,971 |
| In United States, August | 925,089 | 872,035 |
| In United States, 2 months | 1,891,238 | 1,750,006 |
| In Cotton Growing States, September | 836,487 | 747,054 |
| In Cotton Growing States, 2 months | 1,639,533 | 1,488,162 |
| In New England States, September | 108,186 | 101,195 |
| In New England States, 2 months | 200,219 | 201,988 |
| In All Other States, September | 26,476 | 29,722 |
| In All Other States, 2 months | 51,486 | 59,856 |
| **Mill Stocks** | | |
| In United States, September | 1,812,204 | 1,635,413 |
| In United States, August | 1,949,295 | 1,694,557 |
| In Cotton Growing States, September | 1,411,449 | 1,284,679 |
| In New England States, September | 329,874 | 292,229 |
| In All Other States, September | 70,881 | 58,505 |
| **Warehouse Stocks** | | |
| In United States, September | 9,724,038 | 11,526,209 |
| In United States, August | 7,546,268 | 9,297,607 |
| In Cotton Growing States, September | 9,414,423 | 11,131,296 |
| In New England States, September | 291,661 | 366,017 |
| In All Other States, September | 17,954 | 28,896 |
| **Active Cotton Spindles** | | |
| In United States, September | 22,956,224 | 22,977,528 |
| In United States, August | 22,973,572 | 23,042,256 |
| In Cotton Growing States, September | 17,435,358 | 17,391,906 |
| In New England States, September | 4,899,678 | 4,954,328 |
| In All Other States, September | 621,188 | 631,294 |

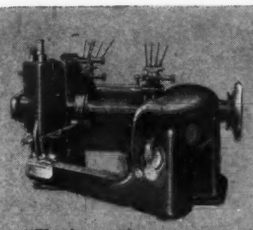
## How To Praise

Praise is a powerful stimulant. To reap its full value, however, a supervisor must know how to praise.

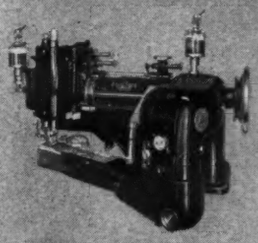
1. Praise, if spread too abundantly, soon loses its force and effectiveness. The supervisor should reserve it for the unusual job.

2. Praise is usually more effective if given in the presence of others.

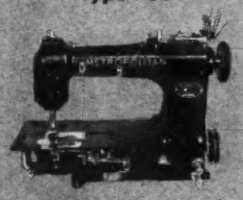
3. Quantity and quality of praise must be adapted to the individual man. An occasional "pat on the back" is essential to bring out the best in some men. Some workers hold such a high opinion of their own ability that they do not need to be told they are good. To such a worker, mix praise with a reminder that some other part of his work is still not up to your expectations. — *"Management Infortion, Elliott Service Co., Inc.*



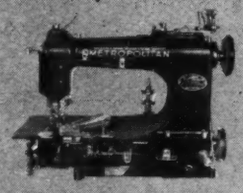
"Flatlock"* type 300



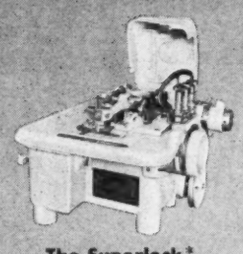
Feldlock "Dualfeed"* type 750



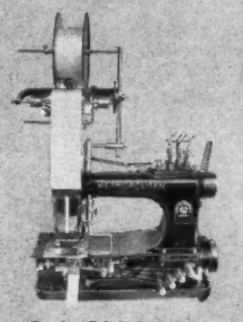
Style 951



Style 950-CDD2



The Superlock*



Style 994-BX-31

# WAR SEWING *MACHINES*

**These fast "W&G" and "Metropolitan" machines will help Textile and Garment making industries meet delivery dates, in the rapidly expanding demand for war supplies.**

**You can also be sure of maintaining the volume for essential civilian needs, if your plant is equipped with these precision built instruments of production.**

**"Flatlock"* type 300**—For underwear flat seaming. United States Service Specifications designate "Flatlock" for practically all seaming operations on knit underwear.

**Feldlock "Dualfeed"* type 750**—For all heavy duty two or three needle stitching on barrack bags, work pants, clothing, etc.

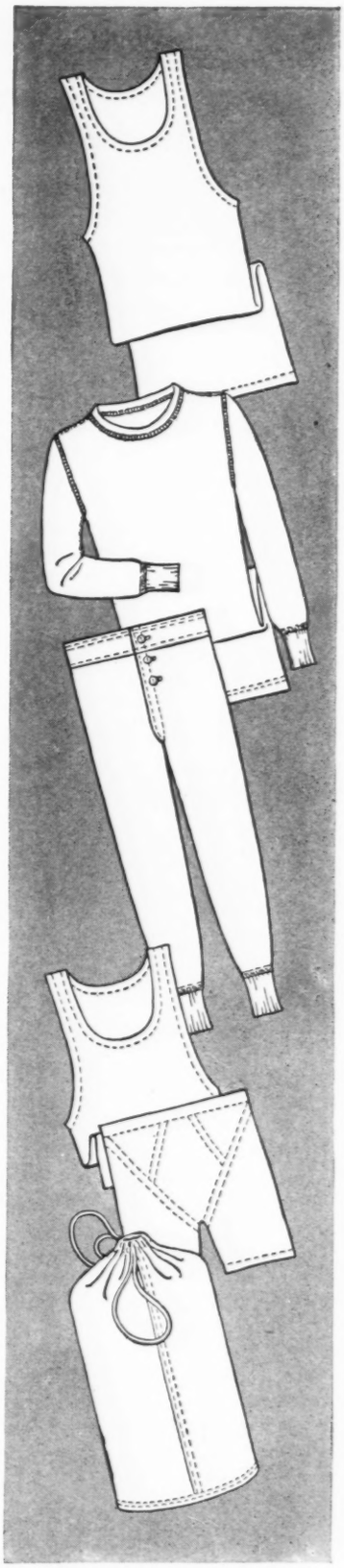
**Style 951**—For lap seam felling and sleeve setting operations on service shirts, work shirts, mosquito bars.

**Style 950-CDD2**—For attaching split tubing around necks and arm holes of service undershirts.

**The Superlock*** (fastest overseaming machine in the world) is designed for overseaming, hemming, edging and serging operations on many articles for service wear.

**Style 994-BX-31** is especially adapted for attaching bands to knit underdrawers for service wear.

*Reg. U. S. Pat. Office



*Send for Illustrated Descriptive Literature*

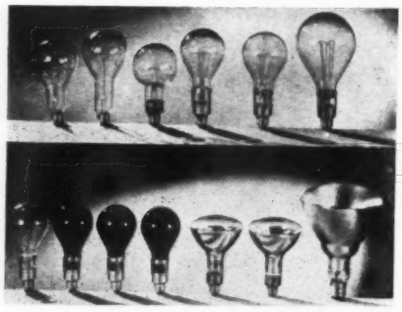
**WILLCOX & GIBBS SEWING MACHINE CO.**

**214 West 39th Street, New York, N. Y.**

# NEW EQUIPMENT and MATERIALS

### New Infra-Red Heat Lamps

Wabash Appliance Corporation, 335 Carroll St., Brooklyn, N. Y., has announced a new line of infra-red heat lamps designed in keeping with the limitations imposed by the War Production Board. The new line includes six clear types, three ruby types, and four reflector types. All feature the M-type tungsten filament for uniform heat distribution and have their bases reinforced with asbestos-lined mechanical straps to withstand the terrific temperatures of tunnel installations. The reflector types have built-in re-



flector linings of pure silver sealed inside the bulbs for protection against dimming and tarnishing by fumes or dirt. Average burning life on all is in excess of 6,000 hours.

These lamps are used in industrial use for speeding up drying, dehydrating, etc. For these purposes. infra-red energy is said to accomplish a better, faster, cheaper and easier job. These lamps produce infra-red or near infra-red rays that are converted into a deeply penetrating kind of heat as soon as they strike an object. Instead of heating from the surface slowly inward, the action is reversed—the infra-red rays penetrate deep down into the surface films of lacquers, paints and enamels to start the baking process from the inside out, instantly and uniformly.

◆

### New Paints

Devoe & Raynolds Co., Inc., First Avenue at 44th Street, New York City, has announced a completely dehydrated paint called "Dehydray". It weighs about half as much as liquid paint and bulks considerably less. It is packed in cardboard cartons to conserve shipping space. It is available in 12 standard colors with 12 additional colors available through the intermixing of two or more of the standard colors.

This company has also produced "Bar-Rust Metal Protective Paint" intended for the protection of outside or interior surfaces of industrial plants or other structures having an appreciable amount of exposed metal.

The metal protective system embodying the use of this material includes a number of rust inhibitive primers to prevent the development of rust and also grasp hold of the metal itself to provide a tough and lasting film that will expand and contract at the same ratio as does the metal over which it is applied.

◆

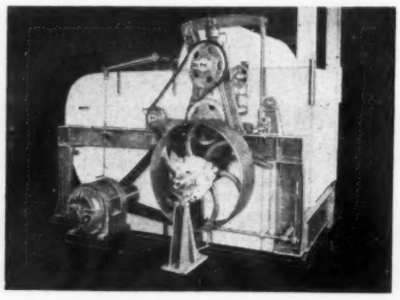
### New Reflector

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa., have announced a new porcelain enameled high bay reflector line for general lighting of medium and low bay areas in foundries, machine shops, power plants, receiving and shipping departments, and similar industrial locations. This new line is designed for either incandescent or high intensity mercury lamps and is available with either the locklite two piece quick detachable construction or one piece type for conduit or outlet box mounting. The multiple coat porcelain enameled reflecting surface is permanent, easily cleaned, and has a reflectivity of 80 per cent.

◆

### New Fulling Mill

Rodney Hunt Machine Co., Orange, Mass., have announced a new fulling mill with radical departures from previous design and construction practice. The principal innovation is in the arrangement of the frame and tub. In the new design the engineers built a frame first to support the rolls, drive, packing boxes, etc. Then from this same frame they "hung" a light strong tub that was designed to serve its essential purpose—that of a container for the cloth. In the machine illustrated this tub has laminated plastic sides and a stainless steel bottom. The easily "demountable" superstructure permits the removal of the hood, front and back sections by two men in five minutes. The new mill also has an improved "coil spring" method providing pressure on the top roll, stronger packing frames with individually adjustable stainless steel guides incorporated as part of the packing boxes themselves.



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### Blackout Lamp

Sylvania Electric Products, Inc., Salem, Mass., have announced, with the approval of the War Department Engineer Board, a blackout lamp designed to provide a quick, easy and economical method of supplying sufficient illumination for ease of movement during blackouts. At present this lamp is available only on a priority rating better than A-2. The approved lamp is an A-15 type bulb, coated black except for a one-inch aperture in the bulb end which emits an orange-red light. Having a 14-watt filament, the blackout lamp is available in two voltage ranges: 115-125 volts and 30-34 volts. It must be used in accordance with the instructions established by the War Department.

◆

## New Publications of Textile Interest

**The Foxboro Company**, Foxboro, Mass. Catalog 95-A, describing the company's full line of instruments for the measurement and control of industrial process conditions. There are 48 pages, over 200 illustrations, and ten sections.

**Crane Co.**, Chicago, Ill. A new bulletin on piping pointers, explaining and illustrating the repairing of leaky gate and globe valves, and giving hints on how to reclaim discarded valves.

**Red-Ray Mfg. Company**, 455 West 45th St., New York City. Bulletin describing Infra-Red Ray equipment for use on tenters, singers, Palmer units, etc.

**The B. F. Goodrich Co.**, Akron, Ohio. "Rubber Conservation for Users of Industrial Rubber Belting", describing how to make repairs on conveyor belts by the use of portable electric vulcanizers.

**Allis-Chalmers Mfg. Co.**, Milwaukee, Wis. Bulletin B6051-C, covering the selection of correct v-belt drives for wartime applications. Bulletin B6052-C, discussing the choosing of correct motors for wartime applications. Bulletin B-6059H, covering applications of centrifugal pumps.

**Roller-Smith Company**, Bethlehem, Pa. Catalog 3350, describing and illustrating 15,000-volt oil circuit breakers for indoor service.

**SKF Industries, Inc.**, Philadelphia, Pa. "A Guide to Better Bearing Lubrication", 32 pages of designs, formulae and graphs explaining the technical text.

**South Bend Lathe Works**, South Bend, Ind. Catalog 67-W, describing the company's South Bend 2-H turret lathes.

**Proctor & Schwartz, Inc.**, 7th St. and Tabor Road, Philadelphia, Pa. Bulletin No. 184, describing the company's mixing picker. Bulletin No. 201, dryers of the impact type for bleached cotton linters. Bulletin No. 202, dryers of the super type for redrying bleached cotton linters in nitrating plants. Bulletin No. 203, dryers of the impact type for cotton, rayon, and similar fibers. Bulletin No. 204, dryers of the impact type for wool stock and shredded rags.

# TOPS *in* TEXTILE STARCHES

## WARP SIZING:

**NALEX**—for fine cotton yarns
**LANAMYL**—for worsted yarns
**FIBERJEL "V"**—for filament viscose yarns
**FIBERJEL "SR"**—for spun rayon yarns

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**FIBERTEX**—for sheer, crisp finishes
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**AMYLO**—for cotton printing
(replaces Natural Gums)
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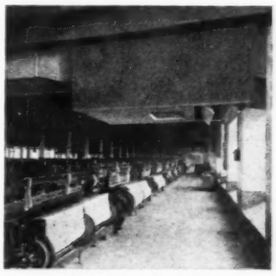
*All made from domestic raw materials, and available in large quantities.*

**NATIONAL STARCH PRODUCTS Inc.**
820 GREENWICH STREET, NEW YORK

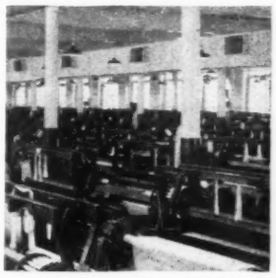
# *VITAL HELP*
## for old Spinning Rooms and Weave Rooms
with the help of
## Certified Climate


Air enters through mixing chamber

Regain higher and more dependable. Greater strength and more uniformity in numbers.

Propelled through ducts, graduated

Drafting of Fibers smoother and more compact. Waste and fly reduced to a remarkable degree.


Uniformity of many outlets

Fewer Ends Down. Not as many stops or piecings. Not as many adjustments. Cleaner and very much more comfortable rooms.

Automatic shutters let heat out

Better Product from shorter, less expensive staple. And very often 2% to 3% more production.

*Certified* **CLIMATE** with its exclusive method of control has been known to PAY FOR ITSELF in a year, or less.

**Parks-Cramer Company**
Fitchburg, Mass. Charlotte, N. C.

# PERSONAL NOTES
## *About Men You Know*

E. L. SKIPPER has been made general manager of the Springs Cotton Mills, including the plant at Lancaster, the three plants at Chester, the two plants at Fort Mill, and the plant at Kershaw, S. C. He has been with the concern since 1914. After service in the first world war, he became superintendent of the Kershaw plant; in 1927 he went to Fort Mill as manager of the two plants there; and in

E. Lee Skipper

1934 he became manager of the Lancaster plant, which position he leaves to accept the larger responsibility. Mr. Skipper, who is also a vice-president of the corporation, will maintain his office in Lancaster.

C. L. STILL, who has been manager of the Fort Mill plants, succeeds Mr. Skipper as manager of the Lancaster plant, and is succeeded at Fort Mill by D. L. THOMAS, formerly superintendent of Fort Mill Plant No. 1. The appointment of B. C. BAKER as manager of the Chester plants, succeeding W. C. SUMMERSBY, resigned, and of J. D. GREEN to succeed Mr. Baker at Kershaw, was reported last month in these columns. The executive branch of the company remains in charge of H. R. RICE, secretary. LIEUT. COL. ELLIOTT SPRINGS is president.

CARL S. KINCAID, president of the Magnet Mills, Inc., Clinton, Tenn., has been made chief of the hosiery unit of the knit goods section of the textile, clothing and leather division of WPB in Washington. He succeeds JAMES D. MAVER, of Hanes Hosiery, Inc. John Shireman is chief of the knit goods section. A. D. CRENSHAW, secretary, will be in charge of operations at the Magnet plants.

E. H. SCULL has been made special assistant to FRANK L. WALTON, deputy chief of the textile, clothing and leather branch of WPB, Washington. Mr. Scull, on leave from the presidency of E. H. Scull Co., Inc., New York City, has been chief of the clothing section. He is succeeded there by G. R. MACDONALD, on leave from the Higbe Co., Cleveland, Ohio.

WILLIAM H. TEDFORD has been made manager of the Thrift mill at Kendall, Co., at Paw Creek, N. C. He has been manager of the Addison plant at Edgefield, S. C., where he is succeeded by CARL GELPKE, formerly overseer of spinning at the company's Pelzer (S.C.) Mills.

JOSEPH E. GOODAVAGE, associate professor of chemistry, dyeing and printing at the Philadelphia (Pa.) Textile Institute, has been commissioned a lieutenant in the Quartermaster Corps of the United States Army, and is on active duty at the Philadelphia depot.

W. T. HUNT has been made superintendent of Carter Mills, Lincolnton, N. C. He was formerly overseer of carding-spinning. He succeeds W. A. HUNT, who is now a salesman for A. B. Carter, Inc., of Gastonia, N. C.

H. CLEON ESTES has been promoted from assistant superintendent to superintendent of Inman (S. C.) Mills. He succeeds LIEUT. M. C. COTTINGHAM, now serving with the armed forces overseas.

W. D. STEGALL, formerly superintendent of the Superba Towel Co., Hawkinsville, Ga., is now manager of Albert Barston, Inc., duck, upholstery and tapestry manufacturers, Charlotte, N. C.

CLIFFORD R. SMITH, of Atlanta, sales representative of Onyx Oil and Chemical Co., Jersey City, N. J., has entered the Army as a First Lieutenant in the Chemical Warfare Service, and is stationed at Gadsden, Ala.

J. B. POWELL has become night superintendent at Erlanger Mills, Inc., Lexington, N. C. He formerly was cloth room overseer at Drayton Mills, Spartanburg, S. C.

O. A. SULLIVAN, of the Hartwell (Ga.) Cotton Mills, has accepted a position with the Jackson Mills, Iva, S. C.

## Obituary

C. E. HUTCHISON, president and treasurer of American Yarn & Processing Co., Mount Holly, N. C., died in Charlotte, N. C., on October 1. He was more than 80 years old. Mr. Hutchison, a pioneer textile manufacturer of the South, was a past president of the N. C. Cotton Manufacturers Association and the American Cotton Manufacturers Association.

GEORGE B. MCCALLUM, 66, president of Propper-McCallum Hosiery Co., Northampton, Mass., passed away in late September.

PAUL B. SEYDEL, 58, founder and president of Seydel-Woolley & Co., Atlanta, Ga., passed away on October 20, following a week's illness after an operation.


**PUBLISHER'S STATEMENT**

of the ownership, management, circulation, etc., required by the act of Congress of March 3, 1933, of COTTON, published monthly at Dalton, Ga., for October 1st, 1942.

State of Georgia, County of Fulton.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared John C. Cook who, having been duly sworn according to law, deposes and says that he is the Business Manager of COTTON, and that the following is to the best of his knowledge and belief, a true statement for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the act of March 3, 1933, embodied in Section 411, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, W. R. C. Smith Publishing Co., Atlanta, Ga.; Editor, R. W. Philip, Atlanta, Ga.; Business Manager, John C. Cook, Atlanta, Ga.

2. That the owners are: W. R. C. Smith Publishing Co., Atlanta, Ga.; Estate of W. R. C. Smith, Atlanta, Ga.; W. J. Rooke, Atlanta, Ga.; O. A. Sharpless, Atlanta, Ga.; J. C. Martin, Atlanta, Ga.; T. W. McAllister, Atlanta, Ga.; E. W. O'Brien, Atlanta, Ga.; J. C. Cook, Atlanta, Ga.; R. P. Smith, Atlanta, Ga.; Mrs. E. L. Philpot, Atlanta, Ga.

3. That the known bondholders, mortgagees and other security holders, owning or holding 1 per cent or more of total amount of bonds, mortgages, or any other security holders are: None.

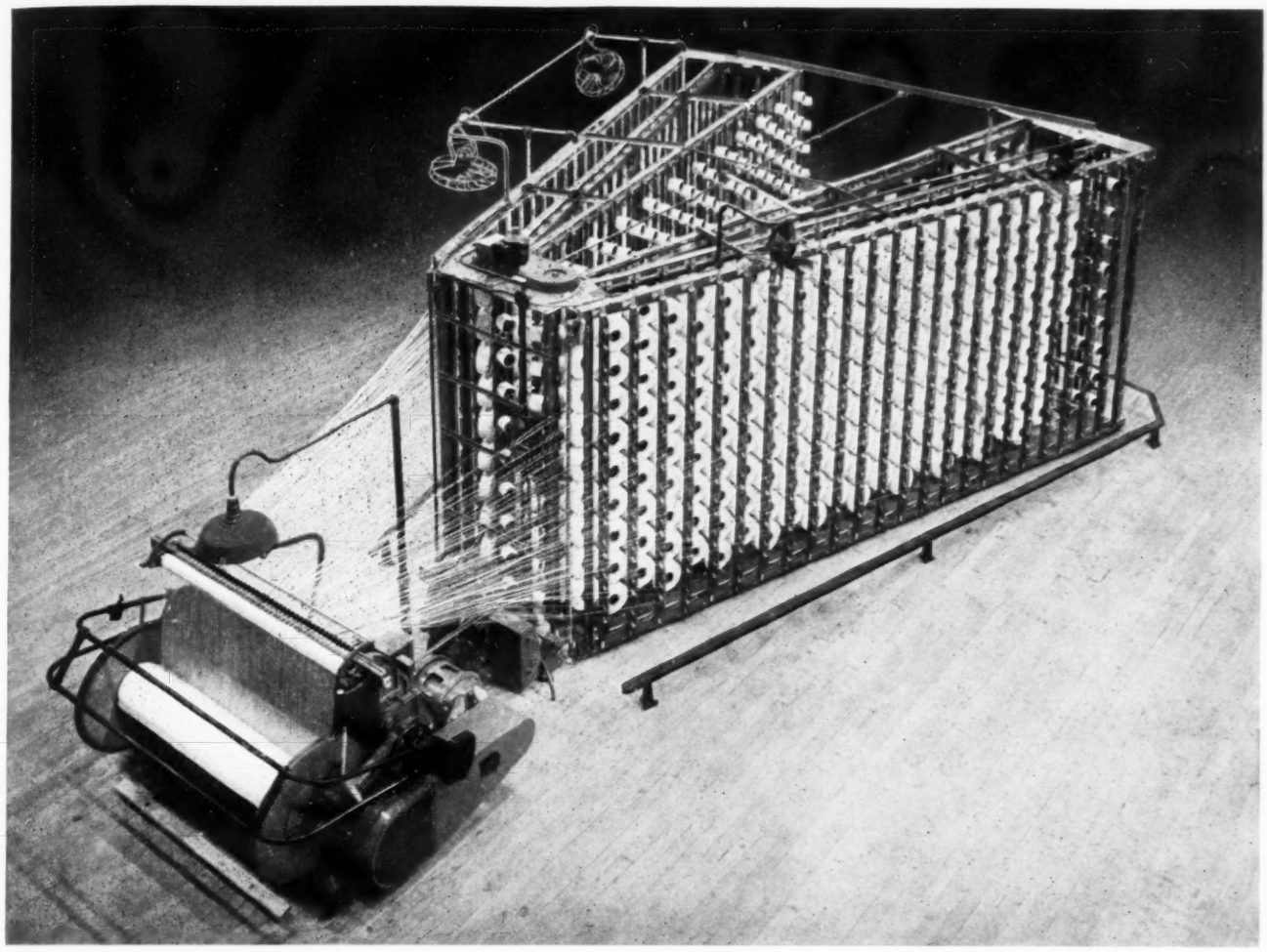
4. That the two paragraphs next above giving the names of the owners, stockholders and security holders if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholders or security holders appear upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stock holders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bonafide owner and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

JOHN C. COOK, Bus. Mgr.

Sworn to and subscribed before me this 24th day of September, 1942.

SEBA J. JONES, Notary Public.

My commission expires March 12, 1946.



# Better Beams—at Half a Mile a Minute!

THE Barber-Colman Super-Speed warper winds yarn on the beam firmly and uniformly at the rate of 900 yards a minute, which is 30.7 miles per hour — but that's only *part* of the story. Warping, of itself, does not *add* anything to the yarn, either in twist or condition but, unless it is done right, it can seriously *reduce* the yarn's natural elasticity. Because the warping adds nothing, but only puts the yarn on a proper beam for slashing or weaving, it must also be done as *economically* as possible. The Barber-Colman Super-Speed Warper meets these conditions. Elasticity of the yarn is preserved to the highest possible degree, because it is subject only to air friction. The high operating speed means high production per operator and per machine. In addition, the special creel with traverseable banks of cheese holders helps reduce change time, and a special comb and drop wires reduce creeling-in time. These and various other mechanical features all combine to insure maximum production with minimum effort.

## For Example . . .

In a prominent coarse goods mill, where Barber-Colman Spoolers and Warpers are in use, the following production is obtained:

| | |
|---|---|
| Count | 9.5s |
| Ends on Beam | 292 |
| Yardage on Beam | 18,000 yds. |
| Net Wgt. of Full Beam, | 659 lbs. |
| Beams per Warper per 24-hour Day | 29 |

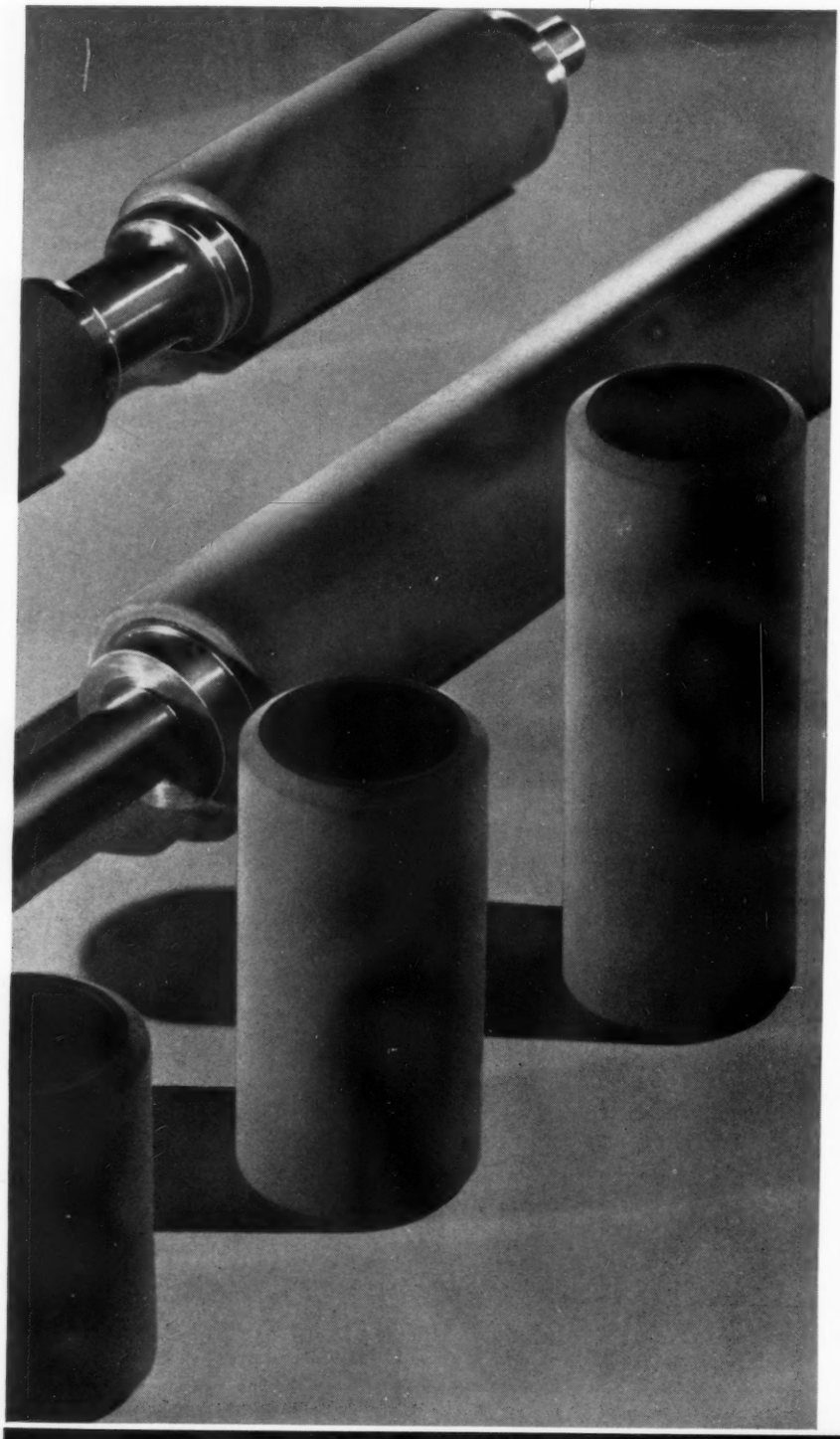
AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

**BARBER-COLMAN COMPANY**

**ROCKFORD, ILLINOIS, U. S. A.**

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

# WHAT OTHER SYNTHETIC COVERING GIVES YOU ALL THESE ADVANTAGES?



✓ **Good Coefficient of Friction**—Less eybrowing than with other synthetic cots.

✓ **Ready-Glued**—Inner surface coated with water-soluble glue for quicker assembly.

✓ **Resilience**—Nonthermoplastic, highly resistant to flattening; aid quick startup.

✓ **Durability**—Long life, resistance to grooving even under severe operating conditions.

✓ **Oil-Resistance**—Unaffected by oil, water, dyes, or solvents used in textile mills.

✓ **Uniformity**—Homogeneous composition assures uniform wear, equal life of every cot.

✓ **Seamless**—No surface irregularities; no troublesome seams to open and shorten life.

Here are the roll coverings for extra-heavy duty — Armstrong's Accotex Cots—proved excellent for use where extreme toughness and solvent-resistance are essential. These rubber-like synthetic cots are recommended especially for use (1) on frames spinning coarse numbers, particularly frames equipped with revolving clearers; (2) on back line rolls of long draft roving and drawing frames; (3) on wet twisting equipment.

Consider all seven advantages of Accotex Cots before you choose any cot for heavy-duty service. And be sure to consult Armstrong about any roll covering problem you have. You can count on unbiased recommendations because we make both cork and synthetic cots. Armstrong Cork Company, Textile Products Section, 923 Arch Street, Lancaster, Pennsylvania.

**ARMSTRONG'S ACCOTEX COTS**

CORK COTS ACCOTEX APRONS

# This is Mighty Little to Ask!

## *Salvage ALL Your Scrap*

To produce all the steel required for war the steel industry needs 7,000,000 EXTRA tons of scrap iron and steel this year. Perhaps you've already searched your properties for scrap, but did you get it all? Aren't there still obsolete machines, shafting, pulleys or fixtures you don't need? Take another look—today.

## BUY WAR BONDS FOR VICTORY

It's the American Way to Victory. Every War Bond and Stamp you buy helps to win the war now, and they pay off when you may need the money later. Make every payday Bond-Day!

**WEST POINT FOUNDRY & MACHINE CO.**

*(Batson-Cook Company, Owners)*

WEST POINT, GEORGIA

# SAVE and SALVAGE

Next to producing, American industry can do two other important war jobs—Save and Salvage—

. . . Savings mean more War Bond purchases and it also takes the form of production economies. . . War breeds extravagance—and extravagance can lose this war.

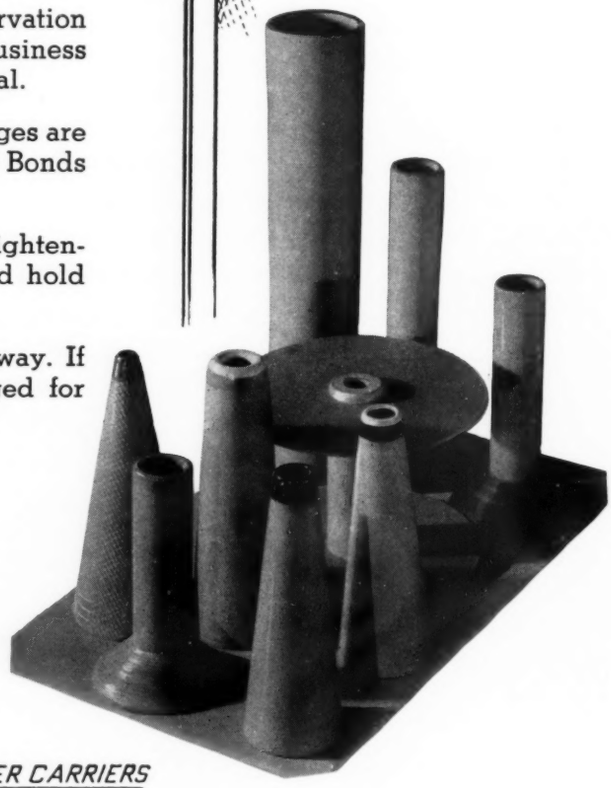
Salvage means more—Scrap drives—rubber drives—tin can drives—paper drives—and others—by *everybody.*

SONOCO believes saving, conservation and salvage are important in business at any time—today they are vital.

10% of SONOCO salaries and wages are going into the purchase of War Bonds every pay-day.

Factory operations have been tightened up to speed production and hold down costs . . .

Nothing is wasted or thrown away. If it can't be reused, it is salvaged for Uncle Sam.

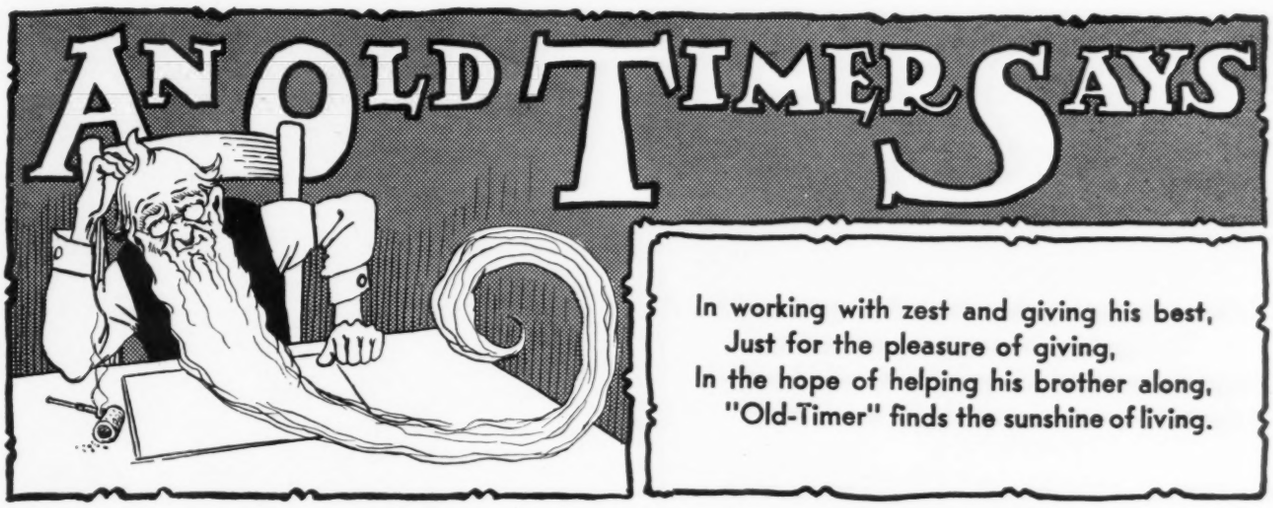


SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

## SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

# A Miniature Slasher

FOR SEVERAL YEARS we have realized the necessity of proper equipment whereby mills could make miniature tests of sizing materials and starches quickly, without having to make a set of warps at the risk of those warps not being sized properly.

Another handicap in making such tests is the time element and the disruption of regular routine work, especially in the slasher room. To make a test of a new sizing compound or a different starch or binder of any kind, often it is necessary for the local slasher department to clean out the kettle size boxes and piping to avoid mixture with the regular materials in use. This is not always done as well as it should be done and the management has no way of knowing whether they are getting a fair test of the new materials or not. When the kettle of new starch or sizing compound is cooked ready for use, the size circulating system should be drained out in order to run the new batch. During this period the operation of the circulating system is disrupted for use to the other slashers.

There are almost innumerable instances where cotton and rayon mills, starch manufacturers, sizing compound manufacturers and laboratories would like to have information which they could obtain by simple single-end tests if they only had the facilities for making those simple, inexpensive tests. However, so far as we know, there has not been built or is not available a practical miniature slasher nor has there been any other practical apparatus built for making such tests.

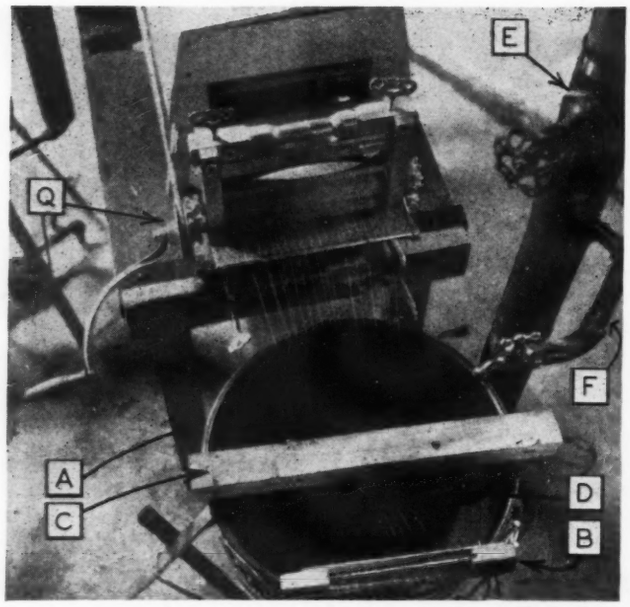
We have had the opportunity of visiting some of the laboratories of prominent textile starch manufacturers and sizing compound manufacturers, and seeing no practical equipment for sizing small batches of yarn and giving that yarn any kind of weaving test which would be comparable to actual weaving put us to thinking along those lines in an effort to devise equipment which would be suitable for making such tests. Inasmuch as there was no such equipment in existence, so far as we knew, and therefore nothing to start from or go by, there was nothing left to do but make a start of some kind.

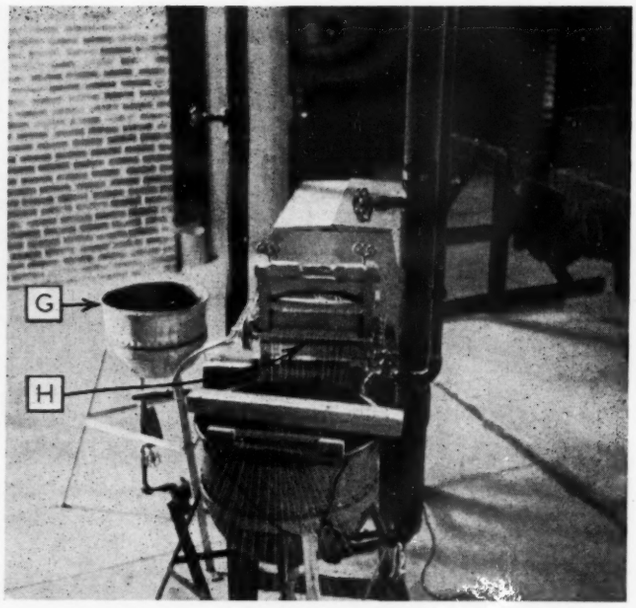
This we have done, and although the equipment is far from perfect, it is a start, and we are in hopes that when the public sees this equipment (along with the special loom for testing single ends of warp described in the August issue of COTTON) many ideas or improvements will be suggested by practical men. But when men who need such equipment begin building miniature slashers and rigging up a loom for testing the abrasive qualities of yarns treated with the many different starches and other binders and the numerous sizing compounds, then it will be only a short while until some smart machinery builder will realize there is quite a large potential market for such equipment and we will have a practical, well built, inexpensive miniature slasher for making such tests in cotton and rayon mills, starch manufacturing firms, sizing compound manufacturing firms, which such firms will be glad to buy in order to conduct efficiently such tests in their plants for their own information.

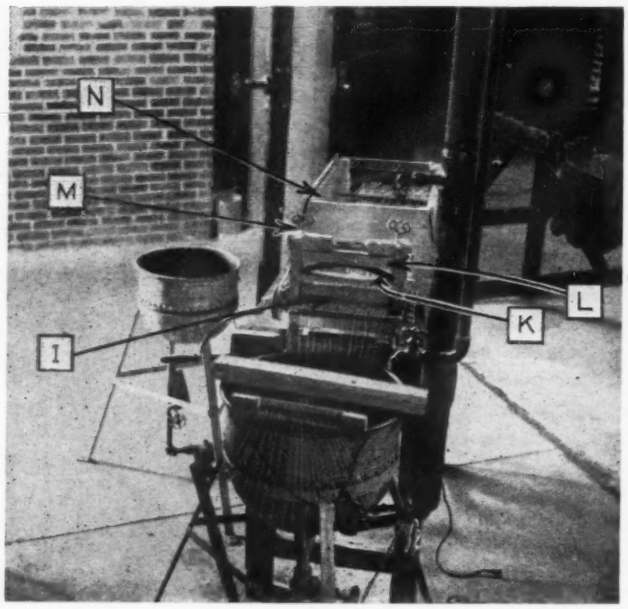
The following description and illustrations are not intended to be complete in detail but rather to give the reader an idea of what can be done in building such equipment where there is available and at your disposal a machine shop, mechanics, and materials to work with.

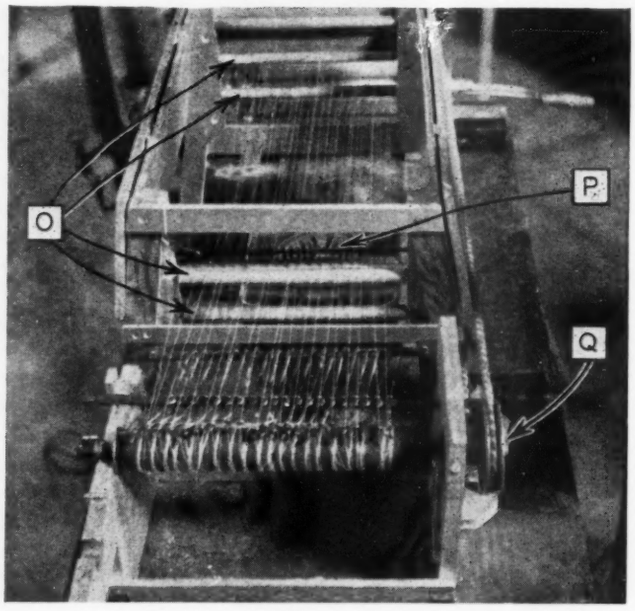
The miniature slasher shown here was built without such facilities and therefore is rather crude, but the fact remains that it does do practical work and give practical results, results which have been proven, not only by numerous tests on starches, gums, glues, etc., as binders, and a long list of different sizing compounds, but by comparing such tests made with the same materials and same yarns on regular slashers in the mill.

All rights to this miniature slasher are reserved by the man who built it, who is negotiating with machine shops to build a miniature slasher for the market including the numerous improvements he has already made on the slasher since the accompanying illustrations were made. However, if any mill, starch




or sizing manufacturer should want to build a miniature slasher for their own use he will be glad to grant permission for a nominal royalty fee that will include further detailed instructions and supervision of the work.

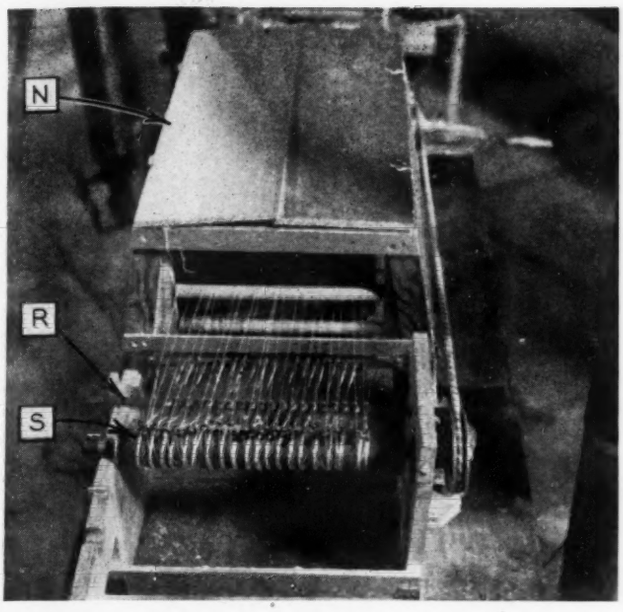
We believe an understanding of how the slasher is constructed and how it operates will be gained from a study of the accompanying illustrations.

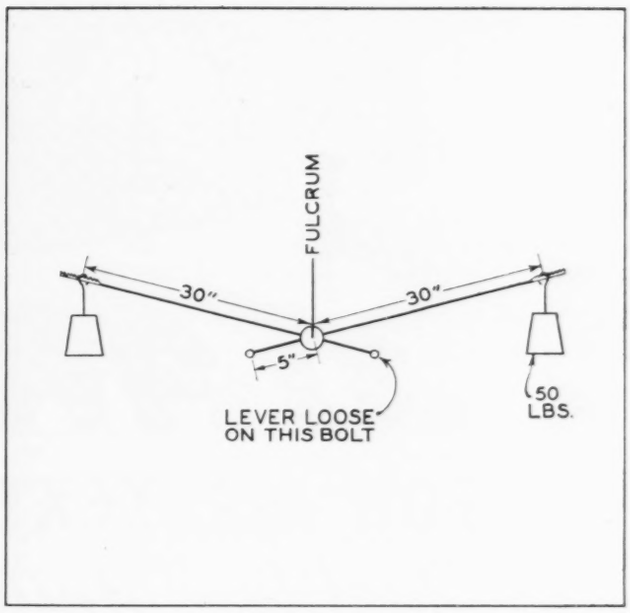
*A* is a steam-jacketed kettle used as the cooking kettle and size box.

*B* is the guide comb, to guide yarns from the creel (which is not shown) to the immersion roll in the bottom of the kettle shown at *D*. *C* is a weighted block to which the immersion roll is fastened. The roll is removable by lifting this block out while the size is being cooked. *D* is the immersion roll to hold the yarn down in the size. *E* is the steam supply pipe. *F* is the cold water supply pipe. *G* shows a kettle not in use (installed by the dyer for another purpose). *H* is the guide or comb to hold each end in place. *I* shows the rubber squeeze rolls, 1¾ inches in diameter, which also act as the driving rolls. K is a flat steel spring to exert even distribution of weight on the squeeze rolls, and *L* shows two movable block-slides in grooves in two upright stands. *M* indicates thumb screws which run screws down to exert pressure on the flat steel spring.

Some men who inspected this slasher raised the question of whether we could determine the amount of pressure being exerted on the squeeze rolls. We changed the method of putting weight on the squeeze rolls by installing levers upon which we hung iron weights of known weight. Thus, by a simple calculation, we could tell exactly the amount of pressure in pounds that the squeeze rolls were subjected to (see pencil sketch). These weight levers are not shown in the photographs which were made before the weight levers were installed.

*N* is the hot air drying oven shown open. *O* shows the carrier rolls in each end of the hot air drying oven




to traverse the yarn three times back and forth in the drying oven. *P* shows the electric heaters used to heat the drying oven. Two of these electric units at $1.00 each gave us all the heat we needed. *Q* shows the pulleys, one on the end of the squeeze roller and one on the end of the shaft which carries a slubber bobbin 1¾ inches in diameter to act as a "loom beam" upon which the dry yarn is wound. To prevent increasing the diameter of the yarn beam by piling up the yarn, we built a traverse motion which is shown at *R*. *S* is the slubber bobbin 1¾ inches in diameter, used to wind the dry yarn upon. This bobbin slides onto a shaft which rests in bearings as shown. On one end of this shaft is the driven pulley *Q*. The traverse motion is operated by a grooved pulley which contacts the driving band, a ⅜-inch rope. This grooved pulley is mounted on an upright shaft. The cross bar which carries the eyes through which the yarn passes is connected to the grooved pulley on off center which gives the cross bar its lateral stroke.

### Textile Standards

The American Standards Association, 29 West 39th Street, New York City, has approved standard methods of testing and tolerances for fabric tubular sleeving and braids. The new standard specifies permissible variations on inside diameter and wall thickness of sleevings and braids, and also governs tolerances as to weight, number of carriers, ends on bobbins, yarn number and imperfections. Testing methods for these factors are specified and referee conditions are set forth in case of the dispute. These standard methods were developed by the American Society for Testing Materials.

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### Rayon Deliveries Up

Domestic deliveries of rayon yarn and staple fiber to American mills for the nine months ended September 30, aggregated 461,300,000 pounds, according to the *Rayon Organon*, published by the Textile Economics Bureau. This total, which represents a new record for the American rayon industry, is an increase of 6 per cent as compared with deliveries of 435,000,000 pounds reported for the corresponding period in 1941.

Deliveries of rayon filament yarn to domestic consumers totaled 347,700,000 pounds for the nine months of the current year, an increase of 4 per cent as compared with 332,900,000 pounds shipped in the corresponding 1941 period. For September alone, rayon yarn deliveries amounted to 38,400,000 pounds as compared with 38,100,000 pounds shipped in August and with 37,000,000 pounds shipped in September 1941.

Rayon staple fiber deliveries to domestic consumers totaled 113,600,000 pounds for the nine months of 1942 as compared with 102,100,000 pounds delivered in the first nine months of 1941, an increase of 11 per cent. September staple fiber shipments totaled 12,400,000 pounds as against shipments of 12,800,000 pounds in August and 13,000,000 pounds in September 1941.

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### P.T.I. Awards Three South American Scholarships

The Philadelphia Textile Institute, Philadelphia, Pa., has awarded three scholarships to South Americans, covering tuition at the Institute, in keeping with the national movement toward closer relations between the peoples of the Western Hemisphere. The first recipients of the scholarships have already been selected and are beginning their work at the school through the co-operation of the Institute of International Education and the New York City Committee for Latin-American Scholarships.

The holders of the new scholarships are Gaspar Melkonian of Santiago, Chile, whose traveling and living expenses are provided by the Chilean government; Fernando Rodriguez of La Paz, Bolivia, also sent by his government to this country to study textiles; and Melquiades M. Perea of Arequipa, Peru, who comes to the Philadelphia Textile Institute after two years of study at the University of Leeds in England.

### To Keep Informed, Read "Cotton"

"I have missed reading your magazine since I left Rome, Ga., to become general manager of the Arkansas Ordnance Plant. As I wish to keep informed on textiles, I do not want to miss your publication."

R. A. MORGAN
Ford, Bacon & Davis, Inc.,
Little Rock, Ark.

◆

### Safety

"Will you kindly send two copies of each of these [articles in COTTON on accident prevention in textile mills, by E. S. Greene]?"

JOHN WATSON
Herbert L. Jamison & Co.,
New York, N. Y.

CLINTON

STARCHES

FOR ALL TEXTILE PURPOSES

*Quality - Uniformity - Service*

CLINTON COMPANY

CLINTON, IOWA

TEXTILE

LEATHER PRODUCTS

It takes more than a desire to be a champion. It takes a lot of knowing how—specialization and originality.

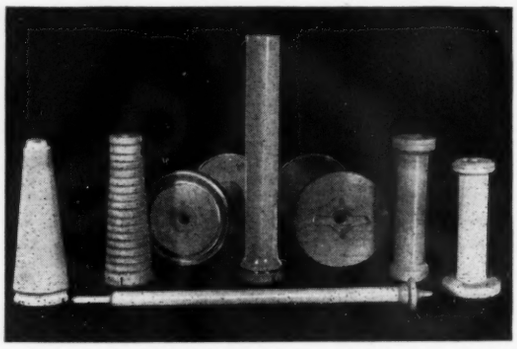
Champion Textile Leather Products are aptly named—we specialize in the practical solution of problems pertaining to textile leathers.

CHAMPION

W. D. DODENHOFF COMPANY

619 RUTHERFORD STREET

GREENVILLE, SOUTH CAROLINA



CARD ROOM BOBBINS

ROLLS AND TUBES

ROCK TERMACO MAPLE

SPOOLS CONES

SPECIALISTS WOOD

The Terrell Machine Co., Inc.

CHARLOTTE, N. C.

# HOW OTHER MEN MANAGE

## Higher Card Speeds

**WE INVITE our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing.**

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EDITOR COTTON:

Aiding "CONTRIBUTOR NO. 7350" in his quest for available information on increasing card speeds in order to increase production while still retaining quality, I am glad to offer what I have learned in several years of card room and research experience in answer to his question, on page 144 of the April issue, as to the effects of increasing card speeds, and how best to make the increase.

It stands to reason that to increase the poundage of production being put through a card, a sacrifice of some kind is going to be made, whether it be in breaking strength, cleanliness or appearance of the product; or the very unpleasant fact that the work through the subsequent processes will run worse than ordinarily.

To venture an increase in the speed of the doffer of 50 per cent, with none of the rest of the card except the coiler heads being changed, doesn't give the first chance for the quality to remain at its previous standard—as too many mills put too much cotton through their cards anyway—and to think of such a thing at this time is inappropriate for experiment when production is so imperative and the final product is what must be considered.

Changing the doffer speed from 6 to 9 r.p.m., as this man suggested, will increase the production theoretically, but in the end this will be a bit short if closely followed, as belt slippage is greater, as well as the amount of waste produced on both the flats and the licker-in.

It is likely that this man thinks his cleaning will improve by increasing the licker-in speed by the same percentage, 50 per cent, but I wish to say that the best cleaning does not come at the highest speed. There is a peak point—and it varies according to the grade and staple and of course the character of the cotton—that can be reached insofar as cleaning and breaking strength are concerned, not only in the production but on the speeds of the cylinder, licker-in and doffer as well. When we reach a certain point in the speed of the cylinder, we run the chance that the centrifugal force on the clothing may loosen it up and cause blisters or that "flew-up" condition for which the innocent card grinder is often falsely blamed.

An increase in the doffer speed does not mean an increase in quality, even though it does give increased production, and where a man is good enough as a carder and can make a card do its best, he can get away with higher production and still get away with producing better work than the haphazard-carder type. The card grinder should by all means be given credit as being more of a quality producer than is usually admitted, as a poor card grinder can make the best loom fixer in the world sweat if he wishes to do so.

Increasing the speed of the licker-in, if done sensibly, can be carried out to a certain point and the result will be cleaner work, up to a certain point, and then we have a lowered break factor as well as increased waste under the card from broken staple.

It seems to me that in increasing the licker-in speed to increase the card production, there will be a sacrifice in either quality, breaking strength or from increased waste if quality is sustained, which means added production cost that may be offset by the added poundage.

Experiments we have made or witnessed demonstrate there must be a medium set up as a standard.

One mill running tire cord was carding 7¾ pounds per hour with 1 1/16-inch Middling cotton, with a breaking strength that just barely got into the tolerance range when running at 1,000 feet per minute surface speed on the licker-in (425 r.p.m.); by increasing this to 1,125 feet (478 r.p.m.), an increase of 12.5 per cent, and retaining all settings except the licker-in which was changed from .007 to .010 to the cylinder, we had an increase of 3.5 per cent in the breaking strength. This was on 14s and 23s peeler yarn. The same production was retained.

Another test made by changing the speed of the licker-in, from 425 to 540 r.p.m., which naturally increased the doffer speed, resulted in cleaner yarn, a 27 per cent increase in card production, but also a 1.1 per cent in flat strips and an added stripping in 8 hours in order to get this cleaner yarn. The breaking strength was retained. The stripper plate was backed off .005 to get the cleaner yarn, however. This increase of 1.1 per cent in flat strips was in production, instead of an increase in actual strips, from the original 3.2 per cent which meant 4.3 per cent of carded laps. This was on Middling cotton, on a wide range of yarn counts.

Another test I know of that is now running is that of increasing the speed of the licker-in and flats along with increasing the production. The flats were increased by 20 per cent in surface speed, the licker-in increased by 21.4 per cent, and the production by 12.5 per cent. We get 1.5 per cent more strips with a cleaner yarn and maintain the standard of tensile strength.

---

Previous discussions on this subject appeared on page 112 of the May issue of COTTON.—THE EDITOR.

The cylinder speed is at 172 r.p.m.

The following tables, made on two makes of cards, may give an idea of what is being done by increasing card speeds. One is on 24s filling and the other on 32s warp. The filling is from long-draft roving and the warp from long-draft intermediates run through conventional type 7x3½ roving, creeled double in spinning:

| | 24s | | 32s | |
|---|---|---|---|---|
| Card Cylinder r.p.m. ..... | 165 | 192 | 165 | 187 |
| Licker-in r.p.m. ..... | 410 | 480 | 460 | 520 |
| Production per hr. ..... | 10.00 | 11.75 | 10.25 | 11.50 |
| Waste (percentages) | | | | |
| Flat strips ..... | 3.41 | 3.83 | 2.51 | 2.77 |
| Vacuum-stripped twice in tests, ran same day | | | | |
| Fly ..... | 1.05 | 1.13 | 1.56 | 1.58 |
| Sliver variation ..... | 10.8 | 10.1 | 11.6 | 10.9 |
| Yarn variation ..... | 11.6 | 11.7 | 10.2 | 10.1 |
| Break factor average .... | 1665 | 1760 | 1908 | 1892 |
| Card front plate settings | | | | |
| Top ..... | .024 | .024 | .019 | .019 |
| Bottom ..... | .024 | .024 | .024 | .024 |

These tests were run on blended cotton from the Mississippi Delta, Arkansas, Oklahoma and Texas, Middling grade, compressed and well cleaned through two bale breakers, vertical and lattice openers, gyrators, three-beater and blending reserve sections of pickers, with laps weighed according to regain indicator chart set at 7.5 per cent, with the actual reading being 6.2 when the laps were taken from the picker room. Controlled temperature in the card room, with a relative humidity of 52 per cent.

As a result of this test, our standard was set at 172 r.p.m., for the card cylinder speed.

CONTRIBUTOR No. 7360

◆

EDITOR COTTON:

This is in answer to the question of "CONTRIBUTOR No. 7350" with respect to increasing the speed of the licker-in, in changing the doffer speed on a card from 6 to 9 r.p.m.

I have a report from 40 mills in Georgia on card practice, and the average licker-in speed for these mills is 433 r.p.m., for an average diameter of a little over 9 inches on the licker-in. The average doffer speed is 9.7 r.p.m.

The 9 r.p.m. on the doffer, suggested by "CONTRIBUTOR No. 7350", is well below this average and the licker-in at from 433 to 450 r.p.m. would be a happy medium for American cotton.

The licker-in speed is seldom brought up in conjunction with production but is varied according to the cotton staple run. One English card manufacturer recommends 420 r.p.m. for short staple and American cotton; 360 r.p.m. for Egyptian cotton, longer staple.

Licker-in speeds of 190 r.p.m. are not uncommon for long staple. The highest licker-in speed of the 40 mills mentioned is 475 r.p.m., which is considerably below the 600 r.p.m. that "CONTRIBUTOR No. 7350" suggests.

A higher licker-in speed has hardly anything to do with better cleaning at increased production unless the former speed was too low to begin with. I think the card manufacturers (and of course the 40 mills quoted) have very good reasons to run their licker-in speeds at from 400 to 470 r.p.m.

Let us look at the matter in this way.

Suppose the cylinder revolves at 160 r.p.m. With a 50-inch diameter cylinder, the circumferential speed per minute, at 160 r.p.m., would be approximately 208.5 feet per minute; at 300 r.p.m., approximately 700 feet; at 400 r.p.m., approximately 940 feet; at 433 r.p.m., approximately 1,020; at 475 r.p.m., approximately 1,120; at 600 r.p.m., approximately 1,420.

It is obvious that at a licker-in speed of 433 r.p.m., the cylinder still runs ahead at twice the velocity of the licker-in, and consequently makes a good job of doffing the cotton from the licker-in.

On the other hand, it is also obvious that the higher the licker-in speed, the lower will be the picking-off ratio against the cylinder surface speed. And again, the beating motion is better balanced at a ratio of 1:2 of licker-in speed against cylinder speed.

Let me put it like this:

If no licker-in were present, the cotton fed in at the feed plate would suffer a beating speed of approximately 2,000 feet per minute, while if there is a licker-in running at half the velocity of the cylinder, this same cotton will only be hit at approximately 1,000 feet per minute, first at the licker-in and again at the cylinder. A speed of 1,000 feet is naturally easier on the cotton fibers than 1,400 feet which is the speed at 600 r.p.m. of the licker-in.

Again, if we should want to increase the licker-in speed to 600 r.p.m., this would call for a 4.8-inch or a 5-inch pulley on most cards. A 5-inch pulley is rather small to convey the power necessary to drive a 9-inch licker-in at 600 r.p.m.

Another item is the increased centrifugal force, which increases as the square of the speed.

At 600 r.p.m., good fiber therefore has a greater tendency to be thrown out and needless waste would be the result. Again, if a heavy lump should go through, the resulting knocking against the mote knives would be much harder than at conventional licker-in speeds. Too many mote knife brackets are breaking now as it is.

If proportionate cleaning is the contributor's objective, I would rather advise running the flats somewhat faster, since, if not changed from 6 to 9 r.p.m. on the doffer, the flats would deliver the same amount of waste in both cases.

While probably an insignificant item, the licker-in at 600 r.p.m. would need approximately twice the power of that required at 400 r.p.m.

The main question as to what effect a 600 r.p.m. speed on the licker-in would have on the final yarn break, I cannot answer. My guess is that the strength would not improve but would rather be impaired.

I have consulted five different textbooks on carding and all record an approximate surface speed ratio of 1:2 for licker-in against cylinder.

The contributor may safely raise his licker-in speed to 475 r.p.m. on American cotton up to 1⅛-inch staple length and the chances are that he would not have to alter any settings.

The duty a licker-in has to perform is a combing-out action, that is, each tooth would, at a perfect run, pull out a single fiber and deliver it to the cylinder. Since it is impossible to attain this perfect set-up, we have to be content to convey 1.6 to 2 fibers per licker-in tooth on the average, which is about the perform-

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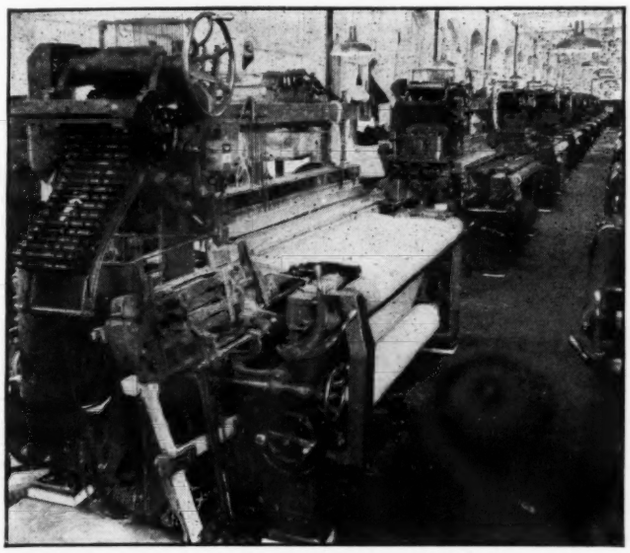

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ance of a licker-in running at about 1,000 feet per minute against a feed of about 6½ to 7 inches per minute. (The 1,000 feet per minute is about 430 r.p.m. on the licker-in).

"CONTRIBUTOR NO. 7350" is really correct in assuming that with a faster surface speed we should also speed up the licker-in, but if the licker-in is already loosening the fibers at 1,000 feet per minute, I do not think it would be well to increase its speed too much, but take a chance on the higher feed and watch the web and later performance.

CONTRIBUTOR NO. 7353

## Wants Card Room Report Methods

EDITOR COTTON:

I would appreciate information through your "HOW OTHER MEN MANAGE" Department as to how machine efficiency is calculated in cotton mill card rooms, say on roving frames. It must be that some of your contributors are familiar with card room production reports, where production is shown in pounds or hanks per spindle.

Three items on such a production report would be:

1. Possible pounds per spindle in a given number of hours.
2. Actual pounds per spindle in a given number of hours.
3. Percentage of efficiency obtained.

CONTRIBUTOR NO. 7387

## Paying Creelers By The Piece

EDITOR COTTON:

There has been some discussion recently in the "HOW OTHER MEN MANAGE" department of COTTON on paying warpers and creelers by the piece. The writer has long been an advocate of piece rates for any and all jobs to which such rates can be satisfactorily adapted. Piece rates, which have been correctly determined, form the basis for the fairest method of remuneration of workers. The speedy, conscientious worker, the slower worker, the indifferent worker are all paid on the same basis; that is, on the amount of work which each performs. In some states the quality of work may also be considered in computing piece rates, in others the rates of pay must be the same regardless of the quality of the work.

Creeling is one job which lends itself, in a large degree, to piece rates. Removing empty bobbins, tubes or cones, replacing with full packages, pulling down ends and tying the knots are operations which are much the same on every creel. The operations can be timed and standards set up. A standard for the complete job of creeling may be worked out on the basis of a certain number of ends creeled per hour or any other time unit. On the other hand, creeling is rarely ever performed by persons working alone, but rather working in groups. For this reason the persons working together must be as evenly matched in skill and in temperament as possible and must realize the necessity for full co-operation. We have never worked in any "Utopian" mills, so up to this writing, we have not found any group of creelers which fulfilled these requirements, *completely*, for any great length of time.

Some obstacles to the successful operation of a piece rate system include: Creelers having to wait on yarn, creels running out together because of various numbers of yarn being run, creelers unevenly matched in skill, creeling delayed because of mixed yarn or other bad work and creelers having to wait because the foreman failed to have creeling instructions ready when creel "ran down".

In determining the correct piece rates for any job it is assumed that complete records of actual performance, under normal working conditions, will be made for a period of time sufficiently long to get a fair average. The standards which are set up as the result of this test should be raised slightly, for it is a safe bet that no worker or group of workers is doing all that might be done when paid an hourly wage. Now another snag is encountered. The government, under the wage-and-hour law, requires that a certain minimum wage be paid, this minimum to be figured on a weekly basis. Over a ten-week period, for example, the piece rate may have allowed the workers to earn an average of much better than the minimum wage requirement, but certain individual weeks, because of unfavorable conditions, may come below the minimum, while other weeks may show a much higher figure. The mill will be required, however, to make up these low weeks, but will get no credit for the higher wages paid when conditions were more favorable for the workers.

For the reasons stated in the preceding paragraph, we are advocating a bonus system for creelers instead of a straight piece rate. If the creelers' rate is already rather high, as it is in many mills, and if the average number of ends creeled per day appears to be too low, as is often the case, then the standard, based on the average, may be raised as much as 10 per cent, and a bonus may be paid for all ends creeled above this new standard, and any day that the standard is not reached no reduction in pay is to be made. This gives the creelers something to work to, and at the same time protects them in the event that conditions beyond their control make it impossible to reach the required standard.

What would be a fair bonus to offer a group of creelers? Here are the writer's suggestions for determining this figure, and we do not claim to be an authority on the subject, so our method might be wrong.

(1) Check previous creeling records and get a fair average, which we will call 1,210 ends per girl for 8 hours.

(2) Next take their rate of pay which we will call $3.50 for 8 hours.

(3) Increase the average by 10 per cent, which will make the standard you wish the creeler to attain 1,331 ends.

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(4) Divide the amount paid daily, $3.50, by 1,331 to arrive at the creeling cost, which will be approximately .263 per hundred ends. (You have been paying .289 per hundred based on the average of 1,210 ends per day.)

(5) You can now afford to pay the creelers a bonus of .263 per hundred ends for all ends creeled over 1,331 per day, for you have not only reduced your creeling cost by almost 10 per cent; you have at the same time increased your warper or beamer production in the same proportion which will improve your overhead cost.

If we are in error in our deductions we shall expect some reader to "show us up" in an early issue.

CONTRIBUTOR No. 4022

# Where The Twist Went

EDITOR COTTON:

I notice on page 107 of the August issue of COTTON that "CONTRIBUTOR No. 7381" asks, "What became of the twist?" in commenting upon my own letter on page 121 of the July issue reporting tests as to the difference in theoretical and actual twist put in the yarn.

I myself would like to know what became of the twist. However, it has been my experience over years of testing yarn to have approximately this same difference between the mechanical twist and twist on test. Not having been able to explain this difference I had come to accept it as being chiefly in the methods employed in determining or testing the single twist in the yarn.

Twist in yarn is not like teeth in gears. The natural characteristics of the cotton fiber give it a very peculiar behavior. The humidity and temperature in the air have a marked effect on it. High temperature in very humid conditions have a tendency to set the twist to a certain extent.

Were all cotton fibers alike, more could be understood about them; however, they are not—every bale is different. Each spindle throughout the plant makes the yarn different. The twist tends to go to the smallest place in the yarn, etc.

Knowing these inherent characteristics of yarn we proceed to make tests interpreting the results as being an average condition of that one test.

The people who use the 1-inch method of testing twist know how difficult it is. They know the yarn could have been stretched and when removing the twist there is always the probability of the fiber slipping and losing twist.

As to the Smith attachment, about which "CONTRIBUTOR No. 7381" inquires, the jaws are set 5 inches apart. The yarn is untwisted in the 5 inches and continued to be twisted until approximately the same amount is put back into the yarn, making the equivalent 10 inches for the test.

It is a question of which method you wish to follow, the 1-inch, which always varies unbelievably because of variation in the yarn from inch-to-inch, or the 5-inch method which is more representative, with more consistent results, and tests more easily made. Until more accurate methods are developed, the question for each mill is to decide which test method is best and to establish the difference between the theoretical and actual twists on tests.

Laboratory reports are puzzles to the average mill man; in other words, they must be interpreted. If we have established a difference of 10 per cent between theoretical twist and twist on tests, and test reports show approximately this difference, I know my yarn twist is about right.

It may have seemed unusual to some that I did not explain this seeming discrepancy. Being an old laboratory man I was concerned with recording facts as found. Then, too, I had come to accept this difference.

CONTRIBUTOR No. 7368

# "Wash" Is Back, Boys

EDITOR COTTON:

Since the year 1913 I have preached against the bobbin-lead system on fly frames. That this system is defective is proven every day in mills running low grade stock, waste, and mixed stock. I need not state here that the war is the cause of many mills mixing roving waste and clearer waste with the raw stock.

Every student should read this article for it looks as if the war may continue for years and result in an increase of the practice of mixed stock.

To find the cause, have someone turn the fly frame by hand and notice the amount the bobbin leads the flyer. If the teeth on the train of gears from the spindle gear on the driving shaft are worn, the distance the bobbin leads the flyer will be surprising.

So here is the trouble, and the only remedy is to replace the train of gears with new gears.

If the reader is running worn gears and having trouble with the ends snapping when the frame is started, let him make the above test.

First, measure the distance the bobbin leads the flyer with worn gears, and how the distance is reduced with new gears, and how well the frame will run after the change.

Another black eye for the bobbin-lead system.

WASH (R. I.)

### Unpleasant Truths

(*Continued from page* 62.)

centers where they can make 10 or 15 times as much as they made on the farm. So, increasing the farmers' income 10 per cent or 15 per cent means nothing toward assisting him to compete with a labor market which can offer 1,000 per cent or 1,500 per cent higher wages than the farmer has been paying.

The farm problem and the manpower problem and the inflation problem are all tied in together, and until we quit paying such tempting wages that a farm hand is content to leave the farm if he can count on one day's work a week in the city, the farmer is going to keep on having this problem. If the farmer keeps on having it, we are not going to get the crops that we have to get. The farmer is patriotic, but he isn't fool enough to work himself to death planting a crop that he knows can't be gathered.

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# Timing the Harness

EDITOR COTTON:

Answering "CONTRIBUTOR No. 7349", the timing of the harness depends on so many things that it is impossible to lay down any hard and fast rules to cover this point. For instance, on a light construction, say 48x48, 20s warp and filling, where a good cover is important, I would level the harness from 2½ to 2¾ inches from the fell of the cloth. My reason for this is that the filling would have to be pushed this distance through a closed shed which would tend to chafe the warp threads. The fuzz on the warp threads then tends to fill in any reediness and forms a cover on the cloth.

Early timing is also used on heavy pick goods, say 80x80, on which it is necessary for the warp threads to cross and lock in the last pick put in the cloth so that the reed will only have to beat up the pick that is in the shed. If the warp thread is very fine and will not stand the chafing, it is necessary to use late timing, with the reed 1-inch from the fell of the cloth, in order that the filling may go most of the way up through an open shed.

Since the picking motion must be set at or just before (high speed) top center, the shedding motion must be timed to it in that the shed must open for the pick. The reason the picking motion is timed at top center is that the lay must be going away from the front of the loom so that the shuttle is held in its path by the force of gravity and there is not sufficient room between the fell of the cloth and the reed for the shuttle to pass through until the crank reaches top center. The position at which the shuttle enters the shed depends largely upon the width of the cloth.

CONTRIBUTOR No. 7359

EDITOR COTTON:

In discussing the questions of "CONTRIBUTOR No. 7349" on page 143 of your April issue, as to the timing of the harness and pick on a loom, I will not try to give a rule that will apply to every weave or every mill. Instead, I will give the rule and ideas we have used on our average plain weave, which is a 36-inch, 68x50, 3.90 chambray that requires a good cover:

Time the harnesses (have them level) 3 inches from the fell of the cloth with the shuttle in the left-hand end with the next pick going over the front harness. If the warp is drawn from left to right with the first end in the front harness this will cause the outside end to lace incorrectly. If the back harness is down, the outside end will not lace in but will be twisted in, causing an uneven selvage.

The pick motion should be set to pick directly on top center. We set the pick on our E-Model Drapers 10½ inches from the breast beam (next to the temple) to the reed. This puts our pick exactly on top center. With the harness and pick motion timed as stated above, the shuttle will enter the shed without being deflected by the shed opening too late and will be out before the shed closes.

With the harness and pick timed as described, the shuttle will enter the shed in the correct position.

It has always been my practice to set the pick motion first; however, it doesn't make any difference.

CONTRIBUTOR No. 7358

Previous discussions on this subject appeared on page 159 of the May issue, page 122 of the July issue, and page 110 of the September issue of COTTON.—THE EDITOR.

# A Scotsman's View on Using Girls for Men

A FAITHFUL subscriber of COTTON in Scotland, reading the recent articles in the April and May issues with respect to replacing men doffers with girls, has written the following interesting letter of comment and information on the subject:

"It seemed difficult to believe that in so progressive a country as yours, especially in the textile trade, that it is only now that a thought has been given to employing girls on work that can release men, as we have done this for 30 years now and carried that same system to our many mills throughout the world. Not only doffing is done by girls, but many other jobs, too, so I will try to enumerate them.

"Firstly, in the scutching [opening] room, all the work is carried out by women from 20 to 45 years of age, with only one man being there in charge. In the mixing room it is girls of 18 to 20 years who feed the bale breaker and the scutching machine.

"At the cards, women 20 to 24 years old carry the laps to the cards and piece them in. The laps weigh from 36 to 38 pounds. Women also strip by vacuum and assist in the grinding of the cards.

"A girl oils the combers, and it is women's work to remove the waste from the back of the machines and take it to the baling press.

"At the draw frames and speed frames [roving frames], all the work is done by female labor, tending, creeling and doffing, also cleaning through of the frames under a foreman.

"All of the work at the spinning frames is done by females—doffing, piecing and creeling, also cleaning through under the supervision of a foreman.

"All roving and yarn is removed by women and put up by the doffers at the ring frames. There are 8 to 10 doffers in a squad and they do about 150 doffings in a 48-hour week, including cleaning by hand of the roving bobbins taken from the creels of the ring frames, and they also put up, as stated previously, the roving on the backs of frames.

"We do not use trucks for doffing as described by Mr. Murphy in the May issue of COTTON in his article about girl doffers in the South American mill. The special tins are slid along a rail on the frame. The tins are divided into two sections, one with empty ring tubes, all placed in proper order ready for going onto the spindles; the other part to put the full bobbin in. The change hand places a basket at the end of the frame and each doffer empties her tin of bobbins into it; the yarn is ticketed and taken away to the warehouse. Doffers are 14 to 17 years of age and are very smart at their work, doffing a 500-spindle frame with 10 in a squad in 6 to 7 minutes, all waste being cleaned off the spindles at the same time."

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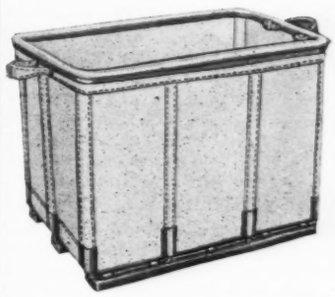

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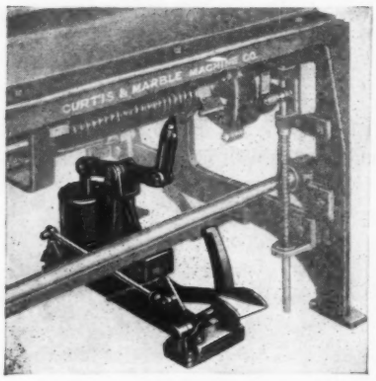


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*Continued on Page 118*

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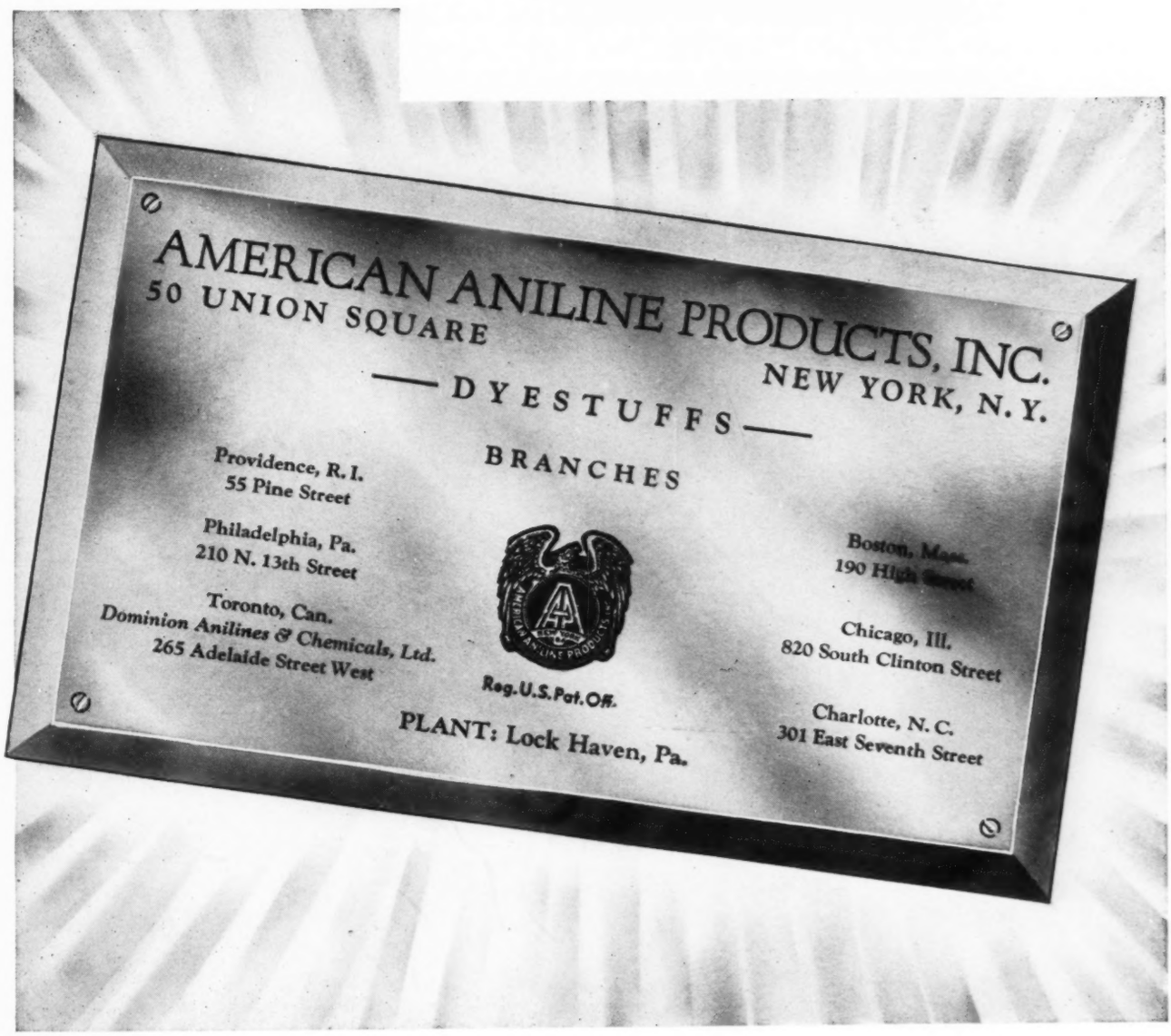

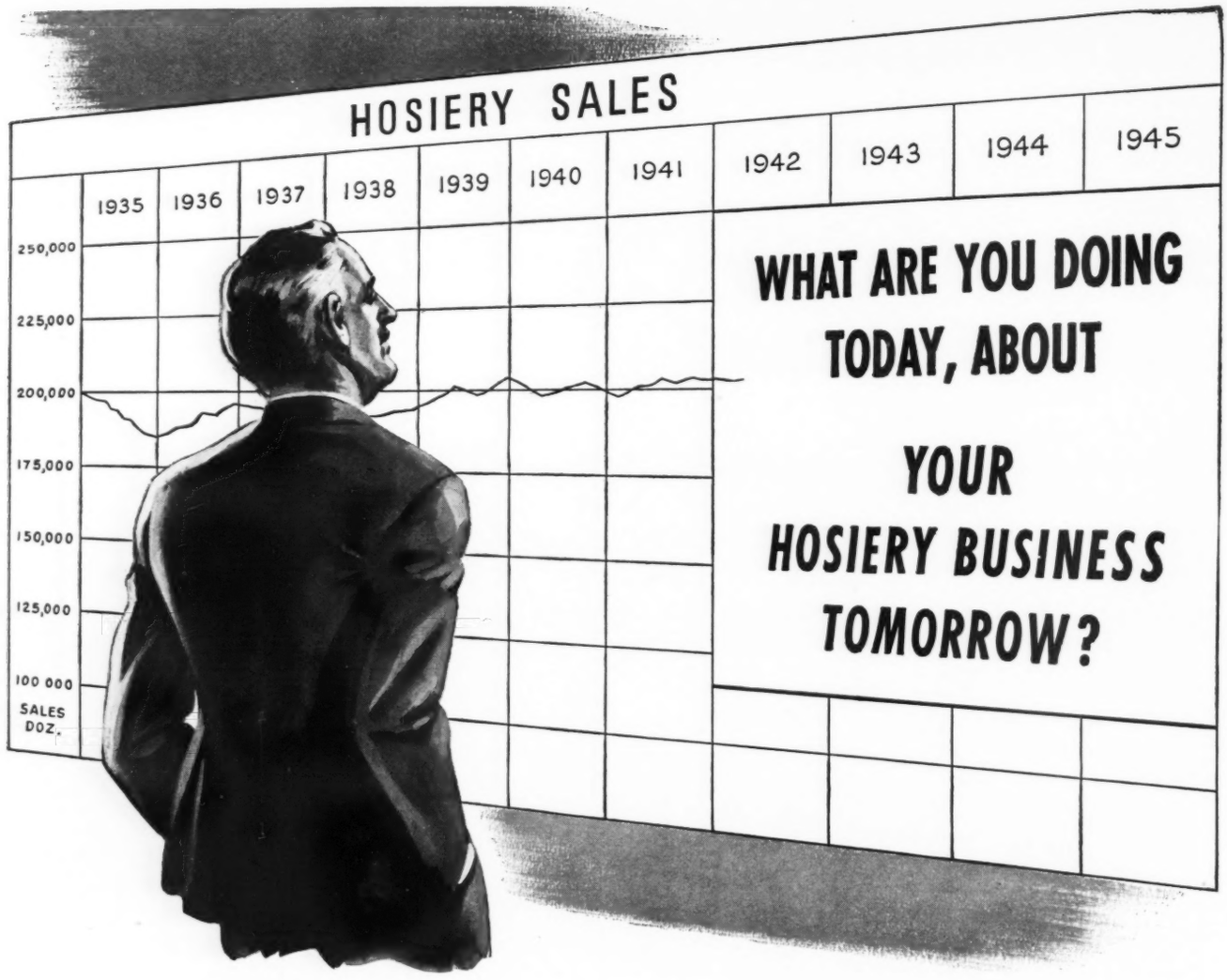


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The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point offices.

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# KNITTING SECTION

# Coaxing a "Black Sheep" Back into the Fold

GEORGE LOMAN, our shipping clerk at the Evernit Hosiery Company, came swaggering through the dyehouse with his characteristic stride, and went straightway to the chemical room where Buddy Moore was weighing a small quantity of dye for his next run. Buddy looked up just when George thrust his big frame through the door, and knew by the nervous frown on the shipping clerk's face that his shipments were behind.

"When are you going to get the next lot of A-220's ready, Buddy," inquired George in restrained tones, "they are supposed to ride today."

"Just as soon as I can get them beat out," Buddy replied apathetically as he placed a little dab of dyestuff on the scales with his spatula, "For the past three days," continued Buddy, "I have hired a 'nigger' fellow every morning, but they just can't take it. I guess they are afraid they will get their feet wet, or their hands chapped."

"Well, what are you going to do about it?" inquired George somewhat impatiently.

"I'll just have to do it myself whenever I can find a few minutes to spare. I can beat out what I can between runs, and what I can't get to will just have to wait. There'll be another nigger along off the WPA pretty soon. Maybe I will get one to stick after a while."

"Huhph," grunted George as he turned to leave, "looks like you would know better than to fool with niggers who have been working on the WPA jobs. Beating out tops on hosiery is too much like work, and too disagreeable for them—especially during the winter months."

For the benefit of our readers who may not understand the object of beating out hosiery tops a brief explanation is in order: Men's half-hose knitted complete with ribbed tops on one knitting machine are somewhat different from those in which the ribbed top is knitted on a ribber and later transferred to the knitting machine needles by hand. When half-hose come from the full automatic machines, the tops are the same circumference of the leg and appear rather sleazy. The object of beating out the tops is to elongate them and, incidentally, cause the tops to contract in width. The process consists of untying a dozen-bundle of this kind of socks, dipping the tops into a soap solution, squeezing the excess water out with the hands, then with the toe ends of a dozen socks held firmly with the hands, the tops

are struck three hard blows over the edge of a vat, or over a specially arranged bar.

The last hand hired for this job was a happy-go-lucky negro by the name of Sam Jolly. Sam was not especially fond of work, and although he was not religiously inclined he spent quite a lot of his spare time on his knees—juggling ivory cubes which he could roll on the ground with uncanny accuracy. It took Sam less than two hours to decide that beating out tops was no job for a smart black boy with a pair of "trained" dice that he could make say "seben" or "leben" whenever he wanted them to. So, rather than lose valuable time explaining to Buddy Moore his reason for resigning, he made a quick exit over the back fence.

At this time I had charge of the boarding room, and while I was not immediately concerned with this "bottleneck" in the production line, as a good will gesture towards my employer and fellow workers I was willing and anxious to do what I could to make the working conditions of this job as reasonably attractive as possible so as to reduce labor turnover. So I promised Buddy that I would look around over the week-end, and if I ran across a likely prospect I would send him around Monday morning.

Meanwhile I found the working conditions of the job—which in addition to beating out tops consisted of sweeping the boarding room floor and mopping the toilet rooms once a day, raking over the yard once a week, and running errands occasionally—to be very bad, particularly in the dyehouse

where the beating out was done. I called this to the attention of Buddy and our superintendent, and they both admitted this matter had not been given the attention it deserved. Seeing that Buddy was having more than his share of troubles and responsibilities, I made a deal with him and our superintendent whereby I would be responsible for the man who did the beating out and janitorial tasks; and I would have the authority to prescribe the equipment for producing good tops—as long as I kept within the budget—and to assign the details of the job.

It was through a strange coincidence that I found Sam, our erstwhile employee, bootblack, and African golf devotee; and re-employed him.

As usual, on the following Sunday morning I prepared to go to church presumably to worship, but the buxom blonde with the rich soprano voice, who often rendered an inspiring solo while the devout brethren passed around the alms basin—well, I will have to admit that she had something to do with my attraction to the fashionable edifice. On my way to church I stopped at a bootblack stand to get a shoe-shine. As the shine boy who was serving me beat a tune on my shoes with his woolen rag in perfect tempo with a hot number that was pouring forth from the piccolo, I noticed that he kept looking me over as though he was sizing me up. Presently he looked up at me sort of patronizing like and said: "Dis ain't de fust time I'se shined yo' shoes." Not being in a debatable mood I nodded in the affirmative. Then he added: "I'se gwin' to give yo' a good shine dis time too, Boss." It was then that it dawned upon me that once before, on an Easter Sunday, I had tipped him a quarter in keeping with the holiday spirit, and this was his way of reminding me of my generosity.

When I stepped down from my high perch with my pedal extremities shining like new money, that black boy was close behind me with his whisk broom as I walked to the cashier to pay the bill. When I received my change, I placed a dime in "Shine's" hand

before he overdid a good thing and brushed all the wool out of my overcoat. As the bootblack bowed his respect and gratitude, and exhibited a double row of "pearls" as he spread his prominent lips from ear to ear in a gracious smile, I noticed he was none other than Sam Jolly, who had shown his distaste for beating out tops at our place by vanishing into thin air only a few days before.

After admiring the angelic appearance of the blonde in the church choir, listening to her soul-stirring melodies which seemed to originate in heaven and, figuratively speaking, receiving a sock between the eyes from some of the preacher's verbal brickbats directed at the iniquities of mankind; I stopped by the bootblack stand on my way home. I wanted to see Sam when he wasn't busy, and have a talk with him. I seemed to sense that he would make us a good beat-out man and janitor if we could understand each other. I thought I knew where to press the right button; therefore I was anxious to feel him out, so to speak.

Since there is always a lull in business around midday on Sunday, I found Sam leisurely smoking a cigarette, and chatting with his fellow shine boys. Calling Sam to one side I inquired: "You're the boy who worked a couple of hours last Thursday at the Evernit, aren't you?" Looking at me warily for an instant he replied: "Yas suh; I'se de same fellah."

"Why did you leave us? We liked your work—what little you did—and I thought you were going to make the best man we ever had on that job," I remarked, hoping to encourage him and win his confidence.

"Well, yo' see, Boss, playin' 'round in dat wattah neahbout gim me de plural pneumonia."

"Sam, how would you like to have a job with only eight hours to stay on the job, eight hours to do what you want to, and eight hours to sleep? Go to work at seven in the morning, half an hour for lunch, and be off at three-thirty in the afternoon for the balance of the day? And if you work hard, and don't saunter around on the job, you will not have to work all the time during the eight hours you are on duty. You will have a chance to catch up with your work; then you can sit down and rest until there is a call for the next lot. You might get as much as half an hour to rest three or four times during work hours. When you are caught up and waiting for the next lot, you won't have to dodge the boss for fear he will put you to doing something else, you can go to the boiler room and sit where it is warm if it happens to be cold weather, and if it is hot weather you can sit in the shade; if you drop off to sleep and we need you I'll wake you up."

"Boss, is yo' kiddin," interrupted Sam as he spread his mouth all the way across his face, his white teeth flashing a contrast against a dark background with a mirthful smile.

"No, I'm not kidding. You could make as much working for me eight hours a day, five days a week, as you can hanging around here ten or twelve hours a day, seven days a week—even after you count your tips. And you know just now people aren't tipping so liberally; they are saving most of their change to buy war stamps or bonds."

"Uh-uh-uh-uh! Ain't dat de trufh?"

"Don't you see, Sam; you will have all day Saturday and Sunday every week-end to shoot

craps; and every evening to promote your matrimony? Think what a time you could have with the yellow gals."

When I mentioned shooting craps and the yellow gals Sam's face lit up with enthusiasm, his eyes opening so wide that only the whites seemed visible; then almost as suddenly his beaming visage sobered, and he countered warily: "But, Boss, when I beats dem tops de wattah runs down mah sleeves and mah boots, and gives me de soah throat."

"I've got charge of beating out now, and I've got up a new rig that will do away with all that. The man that works for me on that job will not have to beat the tops; he'll roll them out. There will be no dripping or slinging of water. He will not have to wear boots, and water can't run down his arms and wet his shirt sleeves. And when he puts his hands in the water to duck the tops, I'll see that the soap in the water is not strong enough to make his hands chap and the skin crack open; there is no excuse for using a soap solution that strong."

While I was putting this high-pressure sales talk on, I was groping for some remark or suggestion that would hasten Sam's decision and clinch the bargain. As luck would have it, I remembered that the negroes of the Sugar Hill section and Sam's gang were keen rivals; they were always feuding. So I concluded my sales talk as I remarked rather nonchalantly: "I have got everything ready to put a man on in the morning. I thought perhaps you would like to have a better job, so I am telling you about it first; but, if you don't want it, I think I can get a boy from Sugar Hill that would be glad to have the job."

"Wait a minute, Boss, I wouldn't go messin' wid none ob dem triflin' good fo' nothin' niggers from Sugah Hill; dey ain't wo'th killin. I'll be dar in de mawnin' if yo' says so."

"All right Sam; I'll depend on you; don't disappoint me." And I walked off on my way to dinner with visions of chicken and dumplings which I hoped would be waiting for me when I got home.

Perhaps I am getting ahead of my story. For some time I had an idea that the tops of socks made on the full-automatic machines such as the Scott & Williams models of the "H-H" type, could be rolled out quicker and more satisfactory than beating them out. My theory was a pair of rollers that would produce the same effect on the double-linked fabric as the take-up rolls on the hosiery ribber. So, on Friday evening after George Loman and Buddy Moore had finished their work and left for the day, I borrowed the janitor's pail—the one with the squeeze rolls and foot lever attached—and took it to the dyehouse to try out my theory.

I waited for George and Buddy to leave before putting my experiment to a practical test because I wanted to be absolutely sure that my idea was practical. If they had seen my beautiful theory "back-fire" in my face, they would have had lots of fun at my expense "ribbing" me about it. And in case I proved to my own satisfaction that I really did have something worth while, I could put my system to work with the complacency of a sophisticated veteran, and perhaps leave the impression on my collaborators, George and Buddy, that it was one of the tricks of the trade I had up my sleeve.

Alone in the dyehouse, except for the night watchman passing on his round who was nice enough to assume that I knew what I was doing; I heated some water just warm enough to dissolve the soap; then I added some olive soap, and tested the solution for alkalinity. The pH indicated about 7 which proved the soap was neutral. Untying a dozen of the "petticoat-top" hosiery I had brought from the grey goods room, I ducked the tops into the solution, spreading them evenly along the front roll of the pail, and as parallel as possible as I did so. Next I closed the squeeze rolls firmly near the juncture of top and leg by pressing on the foot lever, and with both hands I pulled the dozen through the rolls. Just as I expected, "two birds were killed at one stroke"; the excess water was squeezed out of the tops, and they were stretched enough to give a more proportionate width. I repeated this procedure with two more dozen-bundles, and was convinced that my system was not only quicker than the conventional three hard blows over a bar, but the squeeze rolls left the tops smooth and free of chafed spots.

Monday morning I found Sam waiting for me in the dyehouse. I immediately put Sam to dismantling the old beat-out fixtures. With the help of Sam's brawn I ushered the wash tub that was used to hold the wetting out solution, and the bar that had stood up under many a hard blow, out into the back yard.

Meanwhile, Buddy went quietly about his duties in the dyehouse, glancing at me occasionally with an expression that clearly indicated his distrust in my judgment as though he thought I might have lost my mental equipoise and gone completely haywire. Once when I passed by, he shouted out the corner of his mouth: "I hope you know what you're doing; I'm sure I don't." I pretended to ignore the jibe, but couldn't quite repress a self-satisfied smirk.

In less time than it would take to tell it, Sam and I moved an old discarded pairer's table to a corner of the dyehouse where it was convenient to the grey goods room. Next we placed one of the extra stacking stands from the boarding room against the pairer's table. The stacking stand was just high enough so Sam could set the pail on it and work the pedal

lever with his knee. This made constant stooping unnecessary which would have been the case if the pail had been used on the floor, and the lever worked with the foot. Everything in readiness, I did the first dozen socks to give Sam the idea. He was so impressed with the simplicity and effectiveness of the procedure that he threw back his head, opened his wide mouth like an alligator, and a jolly "wha-wha—who-e-e" spontaneously came out, reverberating above the din of simmering water and meshing gears to all corners of the room, and startling Buddy Moore so much that he spilled a dab of dye from his spatula.

After instructing Sam as to the correct proportions of water and soap so as not to make the solution alkaline enough to dry up the natural oil of his hands, which would make them chap and the skin crack and bleed, I returned to my routine duties.

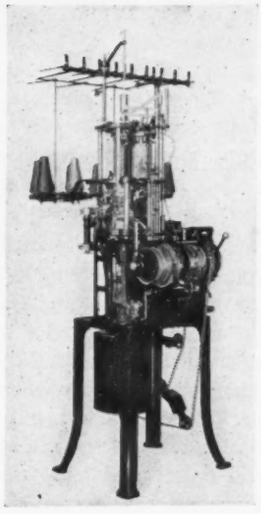
Sam did stick to the job and made us a good hand. The only complaint he made was the first morning. The friction, caused by frequently pressing the roll lever of the pail, made his knee sore. I quickly adjusted this little grievance by making him a knee pad out of some waste hosiery and looper clippings. And while Sam has as much as half an hour's leisure two or three times a day, he does more work than he likely would if I kept him moving all during work hours. He has only so much work to do, certain tasks to perform at more or less regular intervals, and knowing he can gain some play-time by performing these tasks promptly, he has no temptation to stall and drag around all day pretending to be busy.

# KNITTING KINKS

## The Links-and-Links Knitting Machine

### The Upper Transfer Section

**Article 21 in a Series on the Komet and Links-and-Links Machines . .**



SHOWN herewith is a reproduction of Plate 24-H of the Komet and Links and Links Parts Catalog. Two views of the upper transfer section are shown in detail; the upper shows the inner side and the lower the outside. The reproductions shown are for a 4-inch, 24-gauge Links and Links machine.

The respective parts of this section are identical with those on plain two-feed machines with the exception of the upper transfer cam (204345). Therefore, our remarks will be limited insofar as possible to such parts or adjustments which apply to the Links machine or differ from the plain machines.

On plain machines the upper transfer cam moves fully in the beginning of the broad rib or leg, half way in before the heel and fully in before the toe. Thus the upper transfer cam on plain Komets does *all* the down transferring according to its inward movement and the slider setup in the upper cylinder. Now, on Links machines we have a somewhat different setup due, of course, to the fact that transferring must be done continuously after the 1x1 top is completed (or in the 1x1 top when double patterning attachments are used) and down transferring must also be done before the heel and toe just as on plain machines.

For these reasons, the design of the upper transfer cam was changed so that down transferring can be controlled by the upper transfer cam and also by the pattern controlling mechanism.

The upper view of the transfer section shows the upper transfer cam (204345) and the *solid* transfer cam (205321). While patterns are being made either in the top or in the leg, the upper transfer cam remains fully out; down transferring is controlled by the combined action of the pins in the pattern drum, the selector fingers and the selectors. All sliders which are to be transferred down are lowered by the selector fingers and the selectors so the transfer butts will be guided down *below* the upper point of the solid transfer cam (205321) and this cam then completes the downward movement of these sliders and make the transfer.

On Links machines the upper transfer cam makes its first inward move just before the heel knitting begins. At this point it moves half way in and remains in this position until the heel is begun; then it moves fully out. After the heel is completed, the transfer cam moves in half way once more for the duration of foot knitting, then moves fully in just before the toe, thus completing the down transfer of all remaining rib needles, then fully out before the toe is begun.

On plain machines it is possible to slightly increase or decrease the *total* distance the transfer butts are moved down while transferring, by turning the transfer cam bushing to the right or left. The amount of

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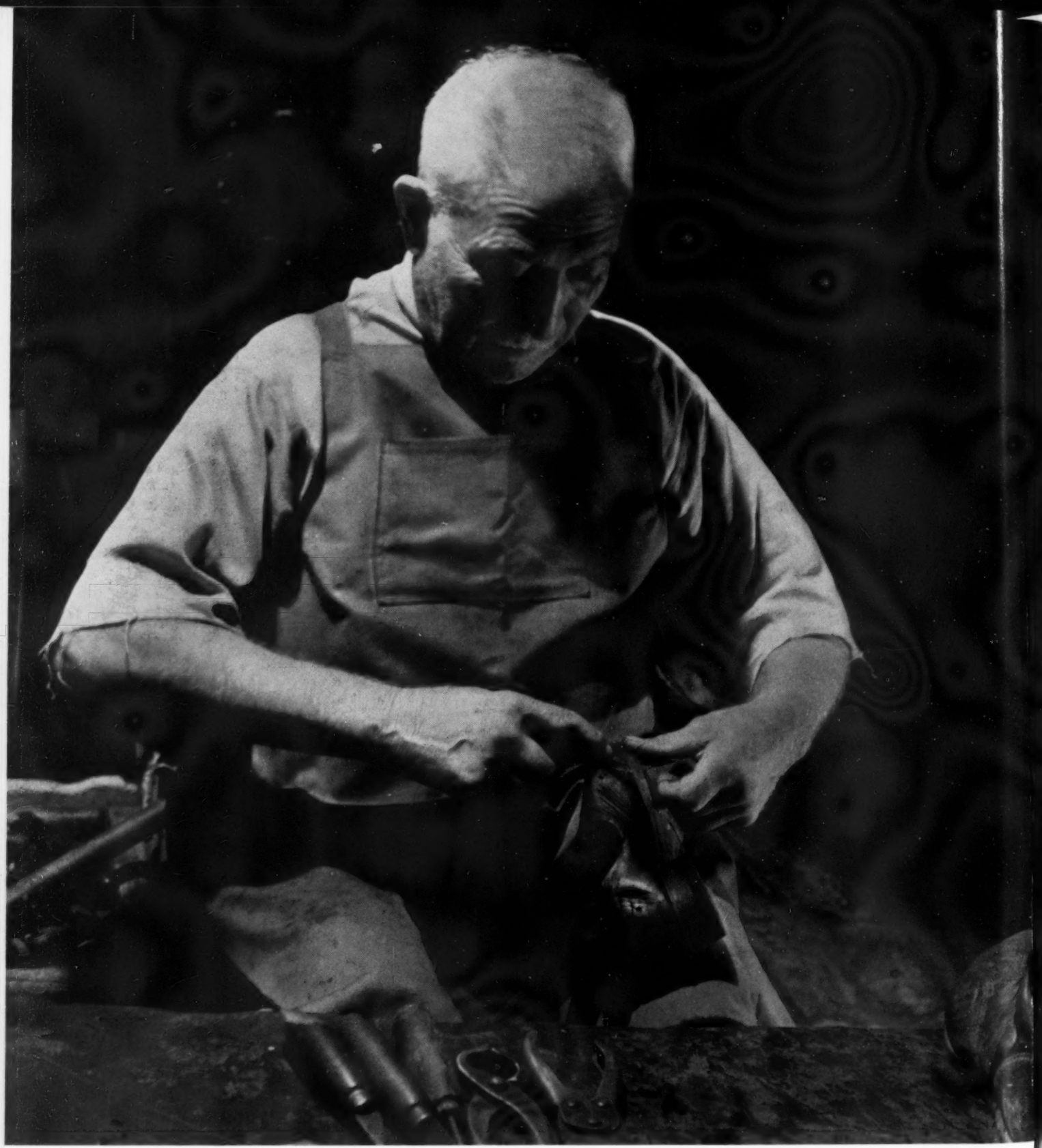

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## "Nine-tenths of wisdom is being wise in time."

THEO. ROOSEVELT

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adjustment is small, to be sure, several thousandths of an inch—in extreme cases the maximum might be 1/64-inch or under. However, this small amount often means the difference between good and bad transfers, damaged needles, etc. Very often fixers remove the transfer cam bushings for cleaning out butts or other foreign matter, failing to take notice of its exact position, and then have trouble after it has been replaced.

This sort of thing cannot happen on Links machines due to the transfer cam being used *only* to guide the transfer butts down below the upper point of the *solid* transfer cam (205321). There is also a slight amount of bushing adjustment to be had, but it need only be used to get the transfer cam to move freely without binding. The solid transfer cam on Links machines is *not* adjustable, being held firmly in position by two dowel pins and one screw. This, in our opinion, is an asset since the fixer is not tempted to move the transfer cam bushing if he had transfer trouble which he might try on plain machines.

Very often we *think* we have transfer trouble being caused by the upper transfer cam setting. After a little or much digging we find our cause for trouble elsewhere. Using a solid (non-adjustable) transfer cam means that it must be accurately fitted on the assembly line or, if it should become necessary to replace one in the mill, once this has been properly done the transfer cam needs no further attention except polishing in the event it should become rough. Expert designing and workmanship, careful selection of materials and fine tempering make Komet cams stand up so well. When we stop to think what continuous transferring on Links machines really means we can readily understand why it takes these combined factors to make this possible.

### Transfer Troubles

Off hand, one might assume that Links machines would develop more transfer trouble than a plain two-feed Komet. Quite the contrary is true. All things considered, we actually have very little trouble on Links machines.

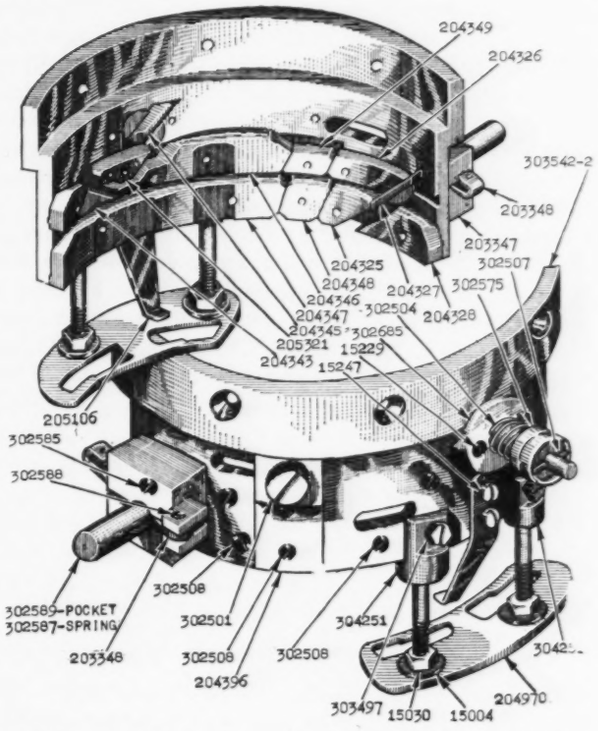
If and when trouble does occur, it is usually located and not difficult to overcome. Among the more common causes are: bad needles, damaged sliders, broken selector butts, broken selector fingers or finger springs. Very often worn or chipped slider knitting butts are the direct cause of transfer trouble.

We once heard an apprentice on Komets say that knitting butts had nothing to do with the transferring operation at all. It was pointed out to him, however, that when a transfer of needles *up* or *down* is made, the knitting butts of those sliders which are to receive a needle are resting against a cam which keeps them in proper position to receive needles. If that part of the knitting butt which rests against the guard or dwell cam should become worn off or chipped, such sliders would not be in proper position to receive a transferred needle. The result would be an incomplete transfer.

It took only a few minutes for this information to soak in, then the apprentice readily agreed that knitting butts had a lot to do with transferring on Links

PLATE 24-H KOMET

UPPER TRANSFER SECTION FOR A 4" - 24 OR 36 GUAGE LINKS AND LINKS MACHINE WITH OR WITHOUT REVERSE WELT




or plain machines. From then on, he looked for bad knitting butts first when trouble developed, and he's still at it.

It is not difficult to understand why a beginner should follow this line of thinking, for in transferring, the transfer cam acts only on the transfer butts in lowering or raising the sliders. So far, so good, but that's just half of the story. Knitting butts must also do their part. Check knitting butts constantly and carefully; it takes so little time and saves a lot of trouble.

### Upper Transfer Cam Adjustment

The upper transfer cam gives little trouble and is very simple to adjust. It can be checked for correct position at its first inward move before the heel or in the foot. In both places, the transfer cam moves in far enough to lower the medium transfer butts and clear the short transfer butts. Keep in mind that when the transfer cam is in these respective positions, short transfer butts are passing down in front of the inner face of the transfer cam, being lowered by the pattern controlling mechanism. The slider set up in the upper cylinder on Links machines is arranged to permit proper in-and-out movement. The steps on the quality drum cams harmonize with the slider set-up.

The upper transfer cam must of course move in and out freely. Sluggish movement will invite trouble at the transfers. Sometimes we find small particles of metal or other foreign matter in the transfer cam bushing which may cause the transfer cam to bind. These things usually cause trouble when the transfer cam comes out, since we must depend on spring action to *pull* the cam out. Thus anything which would cause the cam to bind would also retard the spring action

and prevent the transfer cam from coming out at the proper time.

Correct timing is a very important factor and in many cases much unnecessary trouble can be avoided not only in connection with transfer cam movements but other parts as well. Very often we find it necessary to advance the clutch drum slightly after new machines have been thoroughly limbered up to permit the clutch to shift more freely when going onto the heel and toe. When this is done, the quality drum will also be advanced a like amount *unless* the fixer takes time to *retard* the quality drum the same amount he advanced the clutch drum. Quite often fixers fail to take this precaution, hoping the quality drum will stand a slight advancement, then run into transfer cam troubles, not to mention a half dozen other things which may develop due to improper timing.

So many things on Komets and Links machines depend on split-second timing. The movement of these various parts is positive, adjustment must be accurate, and the one very important factor is perfect timing. This is true not only in connection with up-and-down transferring, but on many other functions as well. All have been discussed in detail in previous articles of the series on Komets.

### The Dividing Cam

The amount of attention certain parts require depends a great deal on the load they have to carry, so let us not overlook the fact that the dividing cam on Links machines really goes to work in comparison to plain two-feed machines.

On these, the dividing is used only four times to knit one complete sock, whereas on Links machines it is constantly in use throughout leg-and-foot knitting, and in part of the top when double patterns are made. Being almost constantly in use does not necessarily mean that a dividing cam on Links machines will give more trouble, require re-adjustment oftener or that it will become completely worn out in a short time.

If a dividing cam on Links machines would wear out from actual use in proportion to the amount of service it must give over and above that required of a dividing cam on plain two-feed machines, it would do well to last a month. The truth is that a dividing cam on plain machines will serve as long as any other cam, barring accidents and abuse, and on Links machines it will do as well *provided* we give it the attention it deserves. Re-polishing at regular intervals will increase the useful life of any dividing cam, and careful checking to see that it is properly set will help a lot.

The two camming surfaces which cam out the sliders in the respective cylinders during transfer operations are designed to cam out the sliders a sufficient distance to permit unhooking needles which have been transferred. Simple adjustments are provided which permit increasing or decreasing this distance if necessary. Also the dividing cam can be moved to the right or left so that the *time* when the camming-out action takes place will be in harmony with the upward or downward movement of the sliders and the recesses in the guard or dwell cams of the upper and lower transfer sections.

The position of the dividing cam referred to above is easily determined and seldom needs changing. It must be understood in the event a dividing cam needs to be replaced due to accidental breakage. The camming-out action of the sliders should be the same for both cylinders. This means that the posts should hold the cam level and exactly central between both cylinders.

The third and equally important position of the dividing cam is its relation to the needles or the amount of clearance to be maintained between the inner face of the cam and the needles. The latter has caused some disputes between Komet fixers. A clearance of .005 is ample on 24-gauge 4-inch machines, some say .006 and .007. We are perfectly willing for each fixer to form his own conclusions. The main point is that he gets results. We would, however, call attention to the fact that the dividing cam need only cam the sliders out far enough to assure unhooking of needles; if and when sliders are cammed out farther than is necessary to assure unhooking, no good will come of it and it can and may do some harm. In our opinion, excessive camming out does increase the wear on the camming surfaces and this should be avoided in order to help increase the useful life of the cam.

Then, too, it is only reasonable to assume that such action cannot possibly be of any benefit to the sliders, so why permit it when it takes but a few minutes to prevent it? We must draw a line between *use* and *abuse*. The fixer is the boss and he and the mill pay the penalty or reap the harvest.

As this is written, thousands of tons of scrap, iron, steel and other metals are being gathered. We are being urged to save our tires, household appliances, farm machinery, etc. We Americans are being told to save everything we can, so we might have a chance to save ourselves.

We wonder how many tons of scrap have been created by abuse? This is just the beginning. Before long it may be impossible to replace machine parts. We are going to learn the hard way: Save what we have or do without.

In the next article on Links machines we shall consider the pattern mechanism.

K. O. METZ

# Lighting for Seamless Machines

EDITOR COTTON:

Opinions as to what would be the best arrangement for the lights over the machines, in installing a new lighting system in a seamless mill, are requested by "CONTRIBUTOR NO. 7340" on page 170 of the April issue of COTTON in "KNITTING KINKS".

Since we do not know the type of lighting system this contributor is referring to, nor the type of machines he is using, it is impossible to give him a specific answer to his question. We shall try to answer this question by relating some past experience along this line in the hope it may be helpful.

In the past 20 years we have all seen lighting systems of various kinds come and go. Many, we were

told, were almost as good as daylight, but there was usually something wrong, and those of us who actually worked under those lights on dark days or at night kept hoping and waiting.

Today's fluorescent lighting comes nearer to supplying everything we need than anything we have used in the past. The dealers who sell this equipment know how it should be installed; however, each mill, due to the kind of goods being manufactured, general floor plans in the knitting room, types of machines being used, condition of paint on the walls and ceilings, will present a different problem. This means that irrespective of the *type* of lighting equipment to be installed, considerable thought must be given to the various factors involved.

We are assuming that the inquirer is talking about fluorescent lighting, so our comments will be based on this kind. For a mill making seamless ladies' hose on fully automatic machines, lights can be placed in the center of the aisles directly above the operators' work tables so as to give ample light for inspection purposes, threading of machines, etc. A sufficient number of lights per aisle in addition to those above the individual work tables will be necessary to assure ample light for machine fixing, since much of this work is done from the front of the machines.

A similar lay-out can also be used in mills where half-hose or children's anklets are made on fully automatic machines, due to the amount of light required for the latter two being about the same as for a ladies' hose mill.

We must not forget that knitting machines have *backs* with many hard-to-see and hard-to-get-at places. It is therefore important that some means of lighting be supplied in addition to the lights in the aisles. This can be done by placing a few units directly over the drive shafts ready for use when necessary, or by supplying the fixers with portable floor lamps with plug-in places located between the machines at conveniently-spaced intervals. This latter method is preferred by many machine fixers since it gives them the opportunity of placing the light where it will do the most good for any individual job. As one fixer put it, "These fluorescent lights are the best improvement this mill has ever made and my floor lamp comes in mighty handy for work on the backs and insides of my machines".

Now let us consider the lighting equipment for a mill making half-hose or children's transferred numbers, and to add fat to the fire, let us assume that both natural and ingrain numbers are being produced. Here is where we *really need light*, and too much attention cannot be given to the number of fixtures, their position in relation to the machines, and the spacing between the fixtures.

The lighting problem in such mills insofar as the machine fixing angle is concerned would be about the same for mills using fully automatic machines, but what a difference we find when we consider the amount of light required for topping and transferring, especially when the operators work on colored goods. Here it is advisable to place the fixtures directly above the machines so they will hang lengthwise, since toppers usually stand and top at their machines. Transferring the tops to the machine is of course a hard operation which calls for the utmost care, skill, etc., on the operator's part if it is to be done quickly, and *plenty of light* if it is to be done efficiently and profitably.

The number of fixtures to use per row of machines will depend on many factors. A little experimenting will help determine this question. Employees on the second and third shifts should be given first consideration; they will accomplish more with less effort when installations are made to suit the work they do. A few lights more or less per row of machines will make little difference in the total cost of installation and maintenance, but it may make a big difference in the final results obtained. A few dozen seconds or menders every day, caused directly or indirectly by insufficient light, will make a *skimpy* installation very costly in the long run. Good light is *cheap* nowadays—especially fluorescent; inferior light is expensive.

CONTRIBUTOR NO. 7370

# Why Fine Gauge is Harder to Size

EDITOR COTTON:

An interesting question was brought up on page 170 of the April issue of COTTON by "CONTRIBUTOR NO. 7344" who asked, "Why is it more difficult to keep fine gauge seamless hosiery in proper size than it is hosiery made on coarse gauge machines?"

Keeping seamless hosiery in proper size, on either fine or coarse gauge machines, is not a difficult task by any means; therefore, we cannot agree entirely with the implication of your contributor. We are perfectly willing to admit that the machine fixer in making adjustments while sizing fine gauge work will have to be more careful than on coarse gauge. This is of course quite obvious, since on fine gauge machines, finer counts of yarns are used which means more courses per inch than would be knit on coarse gauge machines using heavier yarns. We have also found that we can keep better sizes on fine gauge machines by checking and making adjustments more often during each shift than we do on coarse gauge machines. We find that our fine gauge machines are affected more by sudden changes in temperature and humidity than are coarse gauge machines, therefore we check them oftener. In our opinion, it is not a question of whether fine or coarse gauge machines are more *difficult* to keep in proper size, but that fine gauge machines do require more attention than coarse gauge machines to obtain equal results.

Keeping seamless hosiery machines in proper size is one of the most important factors having to do with the production schedule in every mill. Of all the many things which can and do prevent making deliveries of goods on time, none seems to mess things up in the finishing department as much as variations in over-all lengths and sizes. Irrespective of what the real cause of such trouble may be, it must be corrected and controlled in the knitting department.

U.S. PAT. 1749355

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## by EFFICIENT DOUBLE SLUBBING

## by CHAFELESS YARN GUIDING

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The Precision Slub Catchers on the Roto-Coner* have been specially designed to make it easy to get and keep settings that are accurate and parallel. The MacColl (needle-type) Slub Catcher in the front position will spear the soft slubs. The blade slub catcher is set closer to stop the fat and hard slubs; the edges of the blades are square and in line preventing slubs from flattening out and wedging through the opening.

The means of driving the package and traversing the yarn is a smooth, one-piece roll, which eliminates the cause of roll-cut yarn. Since this rotating traverse revolves in the same direction the yarn is traveling, there is no chafing to rough up the fibres.

Yarn on Roto-Cones* can be paraffined for use on knitting machines without rewinding.

Roto-Cones* are identified by the "open wind" . . . the accelerated taper . . . the curved base . . . and the two sets of double punch marks inside the paper cone. If it doesn't have all four features — it isn't a Roto-Cone*.

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## ARE PRODUCED BY LEADING YARN MILLS

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**UNIVERSAL WINDING COMPANY**
Providence, Rhode Island

There is but one safe way to prevent such trouble and that is to make tests regularly and never let up, even though no complaints are made by the finishing department. This can be done by taking a sock from each machine once or twice a week on each shift and sending these goods through quickly so they can be returned to the knitting department foreman for a check-up. The fixers should be given time to have their machines sized before the test is taken so as to avoid alibis. Such a test will tell whether the fixer knows how to size and if he actually is doing it. The very fact that tests are taken will keep him on his toes, and most fixers appreciate the opportunity of seeing some of the goods they help produce and will co-operate readily when sizes show up long or short.

As stated in the beginning, keeping goods in size is not a difficult task; getting this job done thoroughly and regularly *is* a real problem for the knitting room foreman.

CONTRIBUTOR NO. 7371

# An Amusing Experience

EDITOR COTTON:

The incident I am about to relate will likely be "duck soup" for the veteran hosiery machine fixer specializing on split-foot work, but it may be amusing to the old-heads and perhaps helpful to the less experienced fixers like myself.

After a short period as a learner, I was assigned 30 Banner split-foot machines knitting a style consisting of viscose rayon with mercerized top, heel and toe—to keep producing quality hosiery. Since these machines were in good shape when I took charge, and were comparatively modern—not over four years old—I had very little trouble for the first five weeks. As a matter of fact, I was selfish enough to hope something would happen more often so I would have a chance to learn more.

These machines were located near the center of the room; the yarns ran good and seemed to be very uniform; and for the first few weeks the weather was very favorable for even-running work. Consequently, sizing was a simple routine; I didn't bother the stitch-adjusting screws. However, there was one machine that seemed to be knitting sleazy in the instep of every sock that dropped from it. This sleaziness kept gradually getting worse until I know something must be done about it.

My erstwhile tutor had, of course, instructed me which of the various screws to turn, and which way, to correct the texture of stitch in the different parts of the sock. But since my sizes had been running so uniformly I had no occasion to use this knowledge, and so, eager to get a general knowledge of the machine as quickly as possible, I unwittingly forgot the specific purpose of each stitch-adjusting screw. And I was afraid if I asked my foreman to show me it would be a reflection on my aptness for fixing these machines. So I went to work to find a remedy through the trial-and-error method.

Since this bad knitting was produced on the auxiliary stitch cam side, and during the time the cylinder was oscillating to knit the instep and foot of the hosiery, my attention was first attracted to the thumb screw on the right hand side of the cam set. Perhaps it was the easy access of this screw, or a hang-over of that boyish impulse to turn anything that happens to be easy and handy to get to that made this micrometer screw connected to the lower guard cam so alluring to me. But, in spite of the turning of this screw in both directions, I only made matters worse, so after much sweating and fuming I finally got the cam back to where it knitted the same loose stitches instead of distorted ones.

If I had remembered the purpose of all these adjusting screws, and when and how to turn them whenever knitting defects appeared in various parts of the sock, which "Old Joe" had explained to me as he chewed his "cud" and squirted a stream of tobacco juice into the center of the nearest cuspidor, I would have known by the nature of the stitch that this thumb screw was not the remedy for my trouble.

I did remember, however, that the auxiliary feed stitch was usually controlled by screws in a bracket that kept slides in contact with cam paths on the fashioning drum on the rear of the machine. But, alas, I had forgotten which one of the five screws to tighten to affect the stitch in the instep portion of the sock.

After comparing the knitting cycle with the progress of the various cycles of the segment cams on the fashioning drum, I noticed it was the third slide from the left that was being acted on by the cam on the fashioning drum while the instep was being knitted. So, I tightened up on the third stitch adjusting screw from the left—a very little at a time—until the stitches in the instep and upper foot portions compared favorably with the stitches in the leg portion.

It developed that this particular slide was, for some unknown reason, not as hard as the other slides—possibly some defect in the metal that escaped detection. This caused the contacting end of the slide to wear away allowing the bell crank lever to swing closer to the fashioning drum; and this through its connection to the auxiliary cam set permitted the stitch cams to drop slightly to form too long stitches while knitting the instep, etc. I watched this and kept the stitch adjusted here until the time came for the overhauling of this machine; then I had this defective slide replaced with a new one.

CONTRIBUTOR NO. 7389

## Rules Berkshire Must Pay Back Wages

National Labor Relations Board, October 4, again ordered the Berkshire Knitting Mills of Reading, Pa., to reinstate 21 of several hundred employes who participated in a strike in 1936 and to pay them back wages from the time the re-instatement first was refused. The company was also directed to "cease and desist" from dominating the Berkshire Employees Union (independent), without recognition of the union as the sole bargaining agent for the employees and to refrain from engaging in any anti-union activity. But American Federation of Hosiery Workers claim the order was more far-reaching than appeared in the first reports, one claiming that the 21 persons affected by the order will actually be several hundred eligible for back pay and reinstatement.

# BUY WAR BONDS

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# TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

## Although Full-Fashioned Hose Shipments Are Off, Totals for Year About Equal to 1941—Underwear Output Tops Last Year by 9 Per Cent— "T" Knit Sport Shirt Selling in Record Volume—Carded Yarn Ceiling Cuts Reduce Knitters' Costs—Bathing-Suit Publicity Drive Planned—Underwear Knitters Hit OPA Ruling No. 221

**Philadelphia, October 16, 1942**

NOTWITHSTANDING the severe handicaps under which this trade is functioning due to war regulations and the taking away of silk and nylon, hosiery shipments are running very close to the totals of last year, indicating that losses in the full-fashioned end continue to be largely offset by gains in other types. The trend is still downward in full-fashioned production. But in the retail end there has been a decided improvement in the movement of full-fashioned and most other hose lines so that the drop in retail sales last summer is now being overcome to a large degree and this is resulting in freer ordering from manufacturers with buyers finding the finer types of rayon women's full-fashioned tighter than they had expected with some types impossible to locate. In the underwear end of the business volume is excellent even though not so much over last year as predicted which is because the last year was a record-breaker and in addition, more men are now in the Army and Navy so that they do not buy their own. Underwear knitters' manufacturing difficulties are mounting.

### Full-Fashioned

Shipments of women's full-fashioned hosiery in the last month for which data are available were off almost 30 per cent compared with the same month a year previous and indicated that the trend is still in that direction. This may mean earlier predictions by Washington officials that the production of full-fashioned hosiery during the war would drop off about 40 per cent and that this industry would only be able to maintain operations at about 60 per cent, will be borne out by fact. During the first eight months of this year shipments of these lines were off slightly more than 20 per cent compared with the same months in 1941. The data also showed that in August about 80 per cent of the total shipped were rayon and that about 7 per cent were cotton. In August, 1941, shipments of rayon full-fashioned totaled only 40,050 dozen pairs while in the same month this year this had grown to 2,168,035 dozen pairs and the trend is toward a still greater percentage of rayon lines. The trade is showing concern lest the armed forces of the country require a greater poundage of rayon fine type yarns so that if so this may indicate the women's full-fashioned industry during the coming year would have to depend mainly on coarser rayon yarns for this main raw material. There does not seem to be much hope of the cotton assuming a volume position in full-fashioned because shipments over the last year have expanded only from 14,480 dozens in August a year previous to less than 200,000 dozen pairs in the same month this year. Retail demand for full-fashioned after a couple of months of dullness has regained much of its momentum and early in September several large outlets of this type reported business with them was better than it had been for a long time. When wholesale buyers tried to cover with manufacturers they found some of the finer rayons in a tight position, with such numbers as 50 and 65 denier largely off the market while 75 deniers are becoming more difficult to locate in volume.

### Half-Hose

Army Quartermaster Depot here on October 15 received bids on 22,500,000 pairs of light wool socks, it being one of the largest single procurements in its history and one of the largest ever submitted by the industry. It was also significant because such orders had previously been conspicuous by their absence over recent months after the large buying of this type earlier this year and last. This was indicated in data covering shipments for August showing that total shipments of half-hose declined 4.3 per cent that month when compared with the same month a year previous. But for the first eight months of this year such shipments spurted slightly more than 5 per cent compared with a similar period of the previous year; this data also included slacks. The latter alone showed a shipment gain over the same months of almost 14 per cent, showing that this year the inability of knitters to obtain elastic yarns in volume did not curtail volume to a noticeable degree with indications that the same will be true a year from now so far as the top is concerned. In this connection, recent reports from England are that mills there have been ordered to cut five inches off the length of socks to save material so that in that country only slacks will be made or an even shorter length type. It is regarded as significant because this country frequently follows developments of this type, meaning this may come here when the war reaches a corresponding all-out basis in textiles.

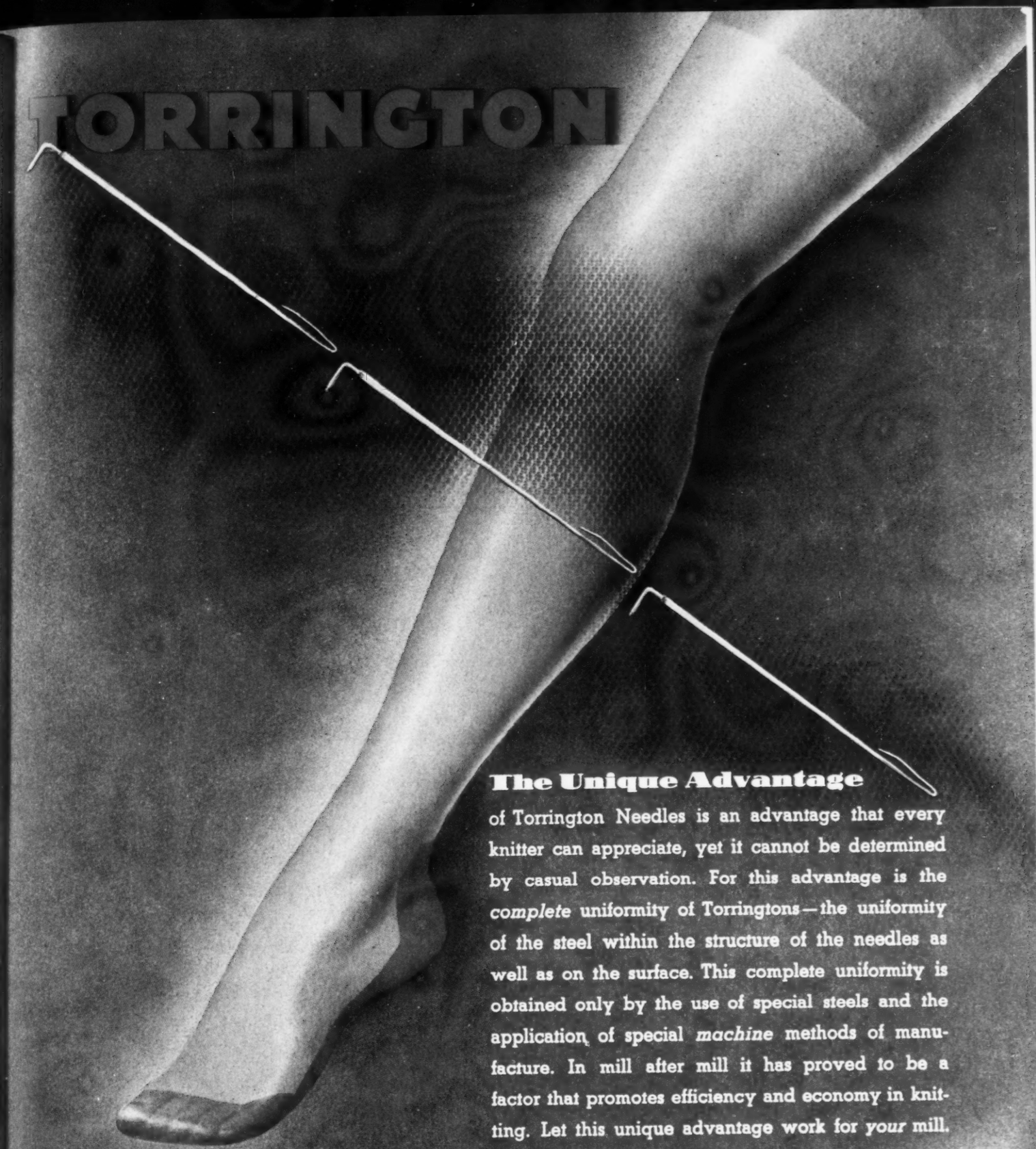
### Seamless

Women's seamless hosiery has been less active and in August such shipments were off almost 23 per cent compared with August of the previous year. For the first eight months of this year they showed very little change compared with the same period in the preceding year. A feature of seamless goods has been the activity in anklets which showed a gain of almost 8 per cent in August and more than 16 per cent for the first eight months. In women's seamless the losses in production of silk have been offset by a corresponding gain in shipments of rayon lines. In the first eight months there was a decline in shipments of silk seamless of more than 93 per cent but in rayon there was a gain of almost 88 per cent with cotton shipments rising about 30 per cent. In anklets the shipment gain for the eight months was 16 per cent. A feature this year of seamless has been the serious drop in shipments of knee-length seamless registering a drop of 45 per cent.

### Underwear

Underwear production so far this year has been running 9 per cent larger than a year previous and shipments have been averaging 12 per cent better. These percentages cover the knit cot-

# TORRINGTON



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of Torrington Needles is an advantage that every knitter can appreciate, yet it cannot be determined by casual observation. For this advantage is the *complete* uniformity of Torringtons—the uniformity of the steel within the structure of the needles as well as on the surface. This complete uniformity is obtained only by the use of special steels and the application of special *machine* methods of manufacture. In mill after mill it has proved to be a factor that promotes efficiency and economy in knitting. Let this unique advantage work for *your* mill.

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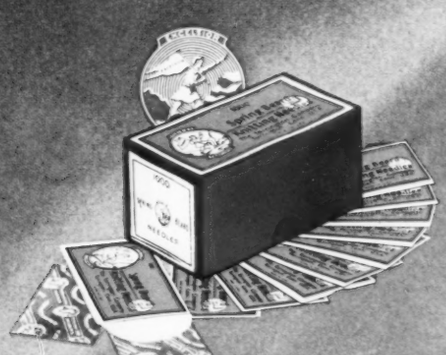
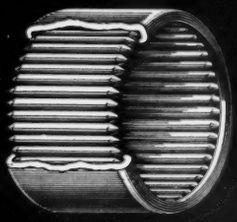


# ...AND IN AMERICA'S WAR PRODUCTION MACHINERY



IN OTHER YEARS, production machinery had a comparatively easy time of it—even for this country, birthplace of mass production. But nowadays, plant equipment is subjected to extremely heavy intermittent loads, hums faster than in any peacetime period, without letup.

To keep the nation's war production moving at top speed around the clock, tougher materials had to be developed... many machine parts redesigned. But the only "change" industry required of the Torrington Needle Bearing was its conversion to war production. In the heavy-duty machinery of America-at-war, this unique bearing is again proving its adaptability — in applications where its definite advantages mean more than ever.

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And so it is easy to see why the Needle Bearing was one of the first machine parts to "change over" and why, too —with the war production program increasing in volume and intensity— no further change has been necessary.

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*Every feature fills a wartime need*

ton and wool sections of this industry and are based on Government data for the first seven months. That these figures were not larger this year in view of the enormous amounts bought recently by the armed forces caused some surprise. But this may be explained in great measure by the fact that production of underwear in 1941 was at a record level and in addition demand from civilians has fallen off due to so many men now being in the military forces of the nation. The trend still is for larger amounts for the armed forces and less for the civilian trade although knitters are maintaining their recent percentages for the civilian trade at this time and look for about the same thing for the coming spring season. Popularity of the so-called "T" or knit sport shirt is an outstanding development for underwear manufacturers. It is a shirt that war workers can wear and does not need much ironing so that it is comfortable and a money-saver, accounting for its growing use under present conditions. Manufacturers point out that the industry now has severe production handicaps but that the coming year may see these even more numerous.

## Claims Underwear Mills Face Growing Difficulties

Roy A. Cheney, president, Underwear Institute, said with the bottlenecks existing in yarn production and the restrictions imposed by the War Production Board, the Office of Price Administration and the Office of Defense Transportation, with more coming over the horizon, it is impossible to say how the underwear industry will be affected. He said regulations restricting the use of fibers and rubber issued by the WPB are well-founded and essential for the successful prosecution of the war. This means, he said, the use of coarser, heavier yarns in underwear manufacture and reversion to the old drawstring top or buttons on such garments in place of rubber. That the consumer in a spirit of co-operation in war time would accept these substitutes was predicted by Mr. Cheney but it may be necessary, he believes, in the future to follow the British and Canadian plans in telescoping mills which, he said, would be accepted by all concerned as a necessary burden imposed by the exigencies of war.

Office of Defense Transportation, Mr. Cheney said, is doing a realistic and wonderful job, proving as in the case of WPB that practical men acting in the interests of the United States will receive the utmost co-operation and patriotic support from all those upon whom these burdens fall. He predicted that in the future the war will implant more and more difficulties on our accustomed ways of doing business so that the underwear industry must be alert to prevent the imposition of useless and needless rules and regulations not truly designed to further the war effort. Due to the large demand for combed cotton yarns for military purposes it has been impossible for makers of civilian underwear to obtain more than a fraction of their needs and if goods for the armed forces are increased further it is probable underwear manufacturers will not only have to use carded instead of combed but also coarser counts.

## Shorter Length Socks Seen Likely Here

Manufacturers of men's half-hose in this country may, in line with the domestic trend towards conservation of yarns and materials in the not distant future, be confronted with the necessity of turning out shorter socks for the duration. Such action was recently taken by the British Board of Trade which ruled that socks knitted in England must be five inches shorter for the rest of the war. This means that slack socks will supplant half-hose entirely in Britain but actually they may have to be classified as "anklets" inasmuch as the length must be shorter than the slack types currently made in England. The British order will have little effect on imported socks handled by American firms this winter for nearly all the large domestic outlets have already brought in or are now expecting arrivals of regular half-hose, especially in wool, sufficient to carry them through the season.

If American knitters were required to shift from the manufacture of half-hose to slacks or anklets this would not present too great a change in present manufacturing methods. The National Association of Hosiery Manufacturers as late as last July reported that nearly a fourth of men's goods were of the slack type. The most important problem in this conversion would be in the lack of elastic thread, which until the curb imposed by the War Production Board, had played an important part in the making of tops of the slack type half-hose. The industry, however, is preparing now—and in instances has already done so—to knit the tops by methods that will be almost as satisfactory as with the use of elastic thread. During the first eight months of 1942 shipments of the slack type sock gained almost 14 per cent while shipments of half-hose and slacks combined gained only a little more than 5 per cent, reflecting the growing popularity among civilian users of the slack socks.

## Plan Publicity Drive for Bathing-Suits

A bathing-suit publicity campaign was voted by 30 manufacturers at a recent meeting held in New York City under the sponsorship of the National Knitted Outerwear Association. They voted to undertake an expenditure of $10,000, to get the campaign started and a committee to handle the matter was chosen as follows: David Aronow, Lee Knitwear, chairman; Edgar Stewart, Cataline Knitting Mills; Maurice Handler, Shepherd Knitwear; Nathan Neuman, Paragon Knitting Mills; Ingram Bergman, Bergman Knitting Mills; A. Persky, Worcester Knitting Mills. David Pauker, Pauker Brothers; and Julius Israel, Regal Knitting Company. Harold Korzenik, acting counsel for the association, presented a resume of the material, labor and other production problems facing the bathing-suit industry and expressed the opinion that bathing-suit manufacturers would be able to write a good business but would face difficult production problems. In discussing fastness and pricing of bathing-suits, Mr. Korzenik pointed out that substitute materials do not hold dyes as well as the materials formerly used. The association, Mr. Korzenik said, is preparing a new bathing-suit no-return tag on which it is pointed out that war conditions have made the regular dyestuffs unavailable and that garments therefore cannot be guaranteed colorfast. It was agreed that such tags should be adopted by the industry for the protection of both manufacturers and retailers. The industry has called the attention of the Office of Price Administration to the pricing problem faced by manufacturers who have ceilings but who are now using substitute materials.

## Underwear Trade Has Met Government Needs

The underwear industry has co-operated most fully in furnishing practically everything that the Government has asked for in the present emergency, including garments for the Women's Army Auxiliary Corps. In practically every instance when the Army, Navy or Marine Corps called for underwear of various types their demands have been fully met and in most cases the quantities offered have been much larger than requested. This was apparent in the last invitation for part-wool shirts and drawers for the Army, namely 13,500,000 garments in all on

which bids were received during the present month. It is common now to hear in the market of individual mills that are running 50 per cent or better on Government business of various kinds and there are instances of mills running much more than this, even 85 or 90 per cent. The spirit of manufacturers is to meet the needs of the Government, and to step up their production to the point required with the civilian end of the business taking what is left. Already the effect of this is seen in the small quantity of some lines of underwear that is available for civilian consuming such as in men's heavy shirts and drawers.

These have all this year been offered only in small quantities and are now practically off the market due to the heavy Government needs for such types. The percentage of the industry's total concentration of Government business this year can only be estimated but based on what has been accepted already and in sight through invitations already out one may estimate that the 1941 rate of such purchases will be practically doubled this year. Manufacturers are prepared to see an even larger percentage of their production going to the Government and some are visualizing a concentration within their industry through Government action that would turn over a much larger part of production to Government needs alone. The kinds of underwear supplied to the armed forces vary from wool shirts and drawers of various percentages and weights to the tricot rayons now being bought for the WAACS. In addition, underwear machinery is also turning out large amounts of mosquito netting wanted by the Army.

## Used Silk, Nylon Hose Ceiling Set

A maximum price of 3½ cents per pound, f.o.b., was set recently by the Office of Price Administration on all carload lot sales of used silk or nylon hosiery to the Defense Supplies Corporation. Worn or used silk hosiery constitutes the principal source of supply of reclaimed silk fiber for use in the manufacture of powder-bags for our military forces. It is necessary to make powder-bags from pure silk because it is the only known fiber which burns without leaving an ash which is detrimental to the rifling in the barrels of large caliber guns. Nylon hosiery is needed also because of the recent discovery of a feasible salvage method. The fiber of used nylon hosiery can be made available for the manufacture of war materials. The price of 3½ cents per pound of carload lots, f.o.b. seller's shipping point, represents some increase over the price at which used silk or nylon hosiery was sold during March 1942. At that time such hosiery was being sold for roofing rags in bales containing other types of rags. Such bales of miscellaneous rags contain only a small percentage of hosiery and to remunerate sellers for the expense of sorting and separate packing and to insure a steady and rapid accumulation of silk or nylon hosiery, the maximum price was established.

## New Cotton Yarn Prices Help Knitters

Knitters that use coarser counts of carded cotton yarns have benefited under a revision downward in the ceiling prices for such types, as issued by the Office of Price Administration. Under the revised ceiling 8s single, for example, is listed at 37 cents a pound while under the old ceiling this was 39½ cents a pound, giving knitters the benefit of this 2½ cent reduction. The cuts were noticeable on most counts up to 26s because the price of 30s single was hardly disturbed at all which means that producers of the heavier types of garments would benefit more. Administrator Leon Henderson said that the need for a reduction in the prices of carded yarn was demonstrated by the investigations which his department had made. It was felt that the "roll-back" in carded yarn prices would avert a squeeze which had occurred, it was said, through increases in the cost of such yarn in the face of established prices for certain cotton products at the manufacturing and retail levels. Henderson said that among the products that would benefit from the reduction included knit underwear, both standard and heavyweight winter types, woven decorated fabrics, cotton duck and webbing. In establishing price reductions in the amendment, OPA officials said an attempt had been made to provide a substantial reduction which would allow spinners to maintain a reasonable profit position in the event that cotton should reach the highest of the four levels provided in Section 3 of the Price Control Act.

## FORECAST

(Opinion submitted by COTTON'S market correspondent)

**Philadelphia, October 16, 1942**

TRENDS over the last month have been toward greater Federal control of business in the United States and for additional price ceiling regulation as well as war events more favorable to the United Nations. For the duration, business is going to be handled by a centralized control at Washington to a greater degree than in our history, which means that business will be told what it can make, how much it may sell the product for, how much its workers must be paid and then what percentage of the profits it may keep. The latter is not going to be large for anyone in this war and it is apparent that, so far, the best organized labor divisions of the nation have profited most. In World War No. 1 capital benefited much more than this time.

This means that difficulties of capital are going to become more numerous and that the return on it will be small. At the same time, indications are definite that wage rates in many lines are about as high as they are going although in some, where the rates are under the general level further increases will come. But with ceilings on their goods most of such increases are apt to come out of manufacturers' margins.

The trend is for business to be regulated as to prices and profits about in line with what has transpired in the public utility field in the last five or eight years. There rates are set and when profits got too high, the rate-making bodies automatically ordered a cut and this is about what all lines of endeavor are facing. There are many brakes to head off large profits, including those already mentioned as well as the re-negotiation clause in war contracts which has been a subject of Congressional debate in recent weeks.

But there is the danger that Washington may harry capital too much and that the law of diminishing returns may begin to have its effect. This cannot be allowed to happen during a war for our existence and for this reason the feeling has been expressed that a ceiling is about here on profits that is not apt to be made much more severe. In fact, the stock market has been discounting some such development in recent weeks, with such predictors evidently feeling that most of the bad news for business is already out.

The war trend this month has in balance been better for our side and so much so that more are now predicting that the war will be won in about two years and not more than five whereas a month back there were some who felt that ten years might be the length of the conflict. This is another favorable business development for capital because the length of this war will make a great difference on conditions in the post-war era and the shorter the conflict the better are chances for the continuation of an economy approaching what we have always known in the United States.

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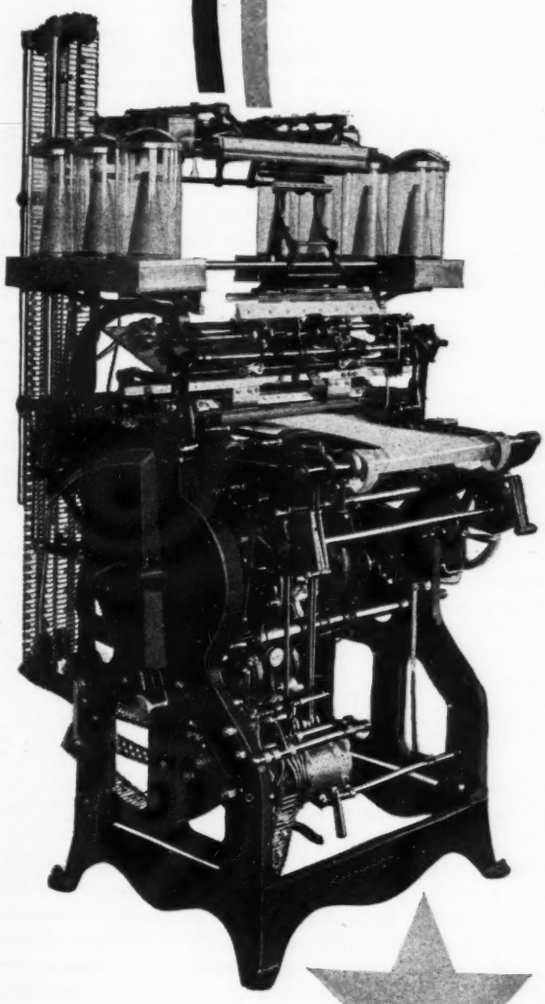

deserves the title of "limited" for the fast, express job it is doing wherever in service. It saves precious running time by knitting the entire stocking in one continuous operation, perfect from top to toe, and elimination of stops and slow-downs and the bad matching of leggers and footers.

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## Air-Conditioned Sock Developed for Army

An "air-conditioned" sock with a cushioned heel, toe and sole for desert and jungle wear has been developed by the Army. Intended for limited issue by the Quartermaster Corps the sock is made of half cotton and half wool, with a loose porous stitch which gives the skin a chance to "breathe", thereby preventing excess sweating and therefore cutting down on chills and colds. A number of problems have confronted Army designers of socks for hot climate posts, camps and stations. One is to keep the feet from being burned during long marches on hot desert sands. Another is to prevent blisters and scratches from impairing the soldier's efficiency while fighting his way through jungle streams and mountains. In times past wool socks were worn under such conditions but they offered only a partial solution. While they reduced the number of blisters and scratches they were far too heavy and caused the feet to perspire profusely. At the same time they were not sufficiently cushioning. The new socks eliminate these difficulties, and it is said the special stitch used in making the heel, toe and sole gives a considerable degree of resiliency, as if the wearer were equipped with a well ventilated rubber sole and heel. The amount of wool used is just enough to take the sting out of the desert sand.

## Underwear Production Exceeds Previous Year

Underwear production this year has been running 9 per cent ahead of a year ago and during the same time shipments have been averaging 12 per cent better. These figures cover the knit cotton and wool division for the first seven months of this year based on data of the Department of Commerce. In the woven division of the industry, production for the same period was only a little over 2 per cent ahead of last year while shipments were actually below last year by about 1 per cent. In the men's woven shorts which make up the largest single part of the woven business, production this year has been running 5 per cent better than last year and shipments about 1½ per cent better. To be taken into consideration in this comparison is the fact that the underwear production for 1941 was probably the largest in the history of the business. Also to be considered was the difficulty manufacturers have had this year to obtain goods, such as broadcloth, except when the mills were operating on Government business. In the same way, combed yarns so largely used by knitters have been taken away from civilian goods makers while the finer carded types have recently been growing tighter. For these reasons the impression is that production comparisons for the last quarter of this year will be less favorable compared with a year ago. The figures for 1943 will be vitally affected by the volume of Government business at that time.

## Knit Sport Shirt Outstanding Item

One of the most important war developments with knitters is the sensational popularity of the knit sport shirt. This is referred to by underwear manufacturers as the "T" shirt. The explanation for the new and large business is that war workers have discovered the knit shirt in crew neck sometimes all white and trim at the collar and also in solid colors, is a practical work shirt. It is reasonable in price, being obtainable under present conditions at 59 cents apiece and up. The usual woven work shirt on the other hand has been advancing in price comparatively more than the knit garment and workers now report that they have to pay $1.00 at least for a satisfactory garment. Price unquestionably is a factor in the popularity of the knit shirt but added to it is its utility. It launders easily, dries quickly, wears well and is a presentable type garment for the worker.

## Hosiery Knitters Are Scrapping Old Machines

More scrapping of full-fashioned knitting machinery with the equipment going into junk for war uses is reported by various sections of the industry. Thirty-nine gauge and even 42-gauge machines are going into the scrap pile. The 42-gauge machines are of the 20-section type which can no longer compete in output and economy of operations with the 24-section type. In scrapping them now manufacturers are merely preparing for a new equipment setup after the war in which the older and more obsolete equipment would have no place. At the same time manufacturers in Philadelphia entered the movement. One plant, the Prestige-Tinicum Hosiery Mills, scrapped about 25 tons of 39-gauge hosiery machines with the scrap being sold and the proceeds being turned over to the Navy Relief Fund. In the meantime, a number of hosiery mills are expanding their output of war supplies. These include not only knit goods, woven fabrics, parachute cords, cording and braid for uniforms but also castings in steel and cast iron for Army and Navy mechanical equipment. Many former hosiery and underwear knitters are already working in such lines and in the same plants in which they formerly made textiles.

## WPB Freezes Used Nylon Hose Stocks

October 12, the War Production Board froze all stocks of used nylon hosiery in the hands of dealers. This action was taken to bring into Government hands available supplies of the fabric which is used in powder bags. Used silk hosiery had previously been frozen. Women were asked to save old and discarded silk and nylon stockings pending the start of an organized campaign for collection that will be launched by WPB, through its conservation division. The Government-owned Defense Supplies Corporation is purchasing the materials in carload lots. From now on the saving of old discarded silk and nylon hose will be a patriotic duty.

## New OPA Underwear Order Hit by Mills

Underwear manufacturers claim that the recent order of OPA setting prices on fall and winter lines, Regulation No. 221, cut their prices approximately 10 per cent without due regard to their increases in cost. On the other hand wholesalers and retailers appeared satisfied with the accompanying amendment to Regulation No. 210. Manufacturers charge that the new regulation actually ignores the advances in labor and material costs since the first of this year. They base this contention on Section 1389.302 which offers three methods of arriving at ceiling prices, with none of the three providing an offset to cost increases after February 10. President Roy A. Cheney of the Underwear Institute, made the following comment on the Regulation as it defined "manufacturer": "In reading the definition of a manufacturer in Regulation 221, I am wondering if, under the law, this definition does not restrict the application of the regulation solely to contractors and wholesalers who buy partly finished garments."

## Penn. OPA Studies Retail Hosiery Prices

State Office of Price Administration at Philadelphia recently started an investigation of alleged violation of the price ceilings on women's hosiery, according to Dr. James F. Bogardus, in charge of the office. It was stated the OPA has received scores of complaints that retailers, chiefly small central city shops and neighborhood stores, are now charging up to a dollar more than the March ceiling, especially on nylon and silk hosiery. None has been received against department stores, it was said.

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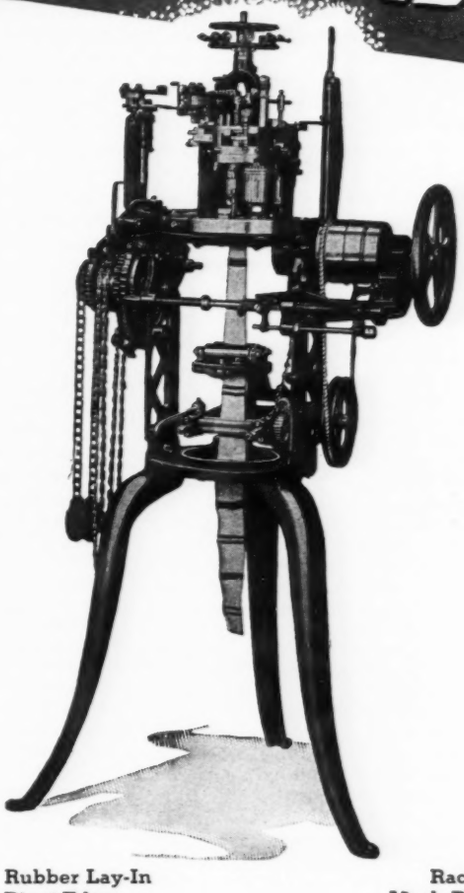

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# TRENDS—YARN MARKETS

## New and Lower Carded Yarn Ceiling Fails to Stimulate Demand—Military Buying Being Stepped Up—Smaller Supplies of Combed Yarns for Civilians Expected—New Peak in Rayon Yarn Production Due for 1942—Worsted Knitting Yarn Production Smaller

**Philadelphia, October 16, 1942**

ALTHOUGH demand for combed cotton yarns is larger than spinners can meet on account of this type being specified in most military cloths and garments, there is dullness in carded which is severe enough to place several spinners in the position where they actually need nearby orders. Several admit that if this situation, especially in the medium ply types, does not change soon they will have to curtail operations. But some spinners even in combed say curtailment is here already on account of the labor situation and some for this reason have been forced to eliminate Sunday work and others the third shift. Between war and civilian demand for rayon yarns a new high in production of this type yarn will unquestionably be achieved this year as there was a 6 per cent increase in domestic deliveries of it to domestic mills for the first nine months.

### Cotton Yarns

The long-awaited revision of the carded cotton yarn ceiling was announced September 24 by the Office of Price Administration in a move which the agency described as designed to prevent increases in the prices which consumers must pay for cotton goods. It was explained by OPA that its cost studies revealed prices in the carded yarn price schedule No. 33 were too high in relation to prices established by it for combed yarns and other cotton goods. This change in carded yarn prices had been rumored in the trade for several months and the revisions actually made were about in line with what had been expected. While many manufacturers had asserted during the previous weeks that they were postponing new purchases until the new ceiling was issued, trading since has failed to improve and except for military orders remains dull.

This dullness has now lasted for such a long time that some carded yarn producers are running out of orders, resulting in a reaching for business so that numerous manufacturers instead of rushing in to cover under the new ceiling rates are again delaying commitments. They feel that if civilian demand does not improve quickly and military orders develop at a more active pace the market will again witness ceiling-shading such as was apparent during recent months. In several counts such as 20s two-ply this shading was more severe than the new ceiling rates and for this reason several buyers feel that this easing in prices will become more apparent in the coming weeks. But in most other carded numbers and especially single yarns used by knitters are remaining steady in price and selling at the full ceiling levels. Knitting yarn producers are in a much better position so far as undelivered balances are concerned than are spinners of medium two-ply counts. Producers of finer carded weaving are in a better position in this respect due to the large amount of such counts as 30s two-ply which are going into various types of goods for the armed forces.

While this lowering of carded yarn prices has been well received by the trade there is a growing demand that the combed yarn ceiling be revised in the other direction, spinners in this category asserting that on several counts such as 30s single they are unable to do better than break even. Other sellers claim that they either can do no more than break even on all counts up to 40s or show an actual loss in such sizes so that a number of them are less anxious to sell than for a long period. This situation is of particular importance at this time because the Government specifies combed yarns for much of its military goods and garments, making it essential for the production of combed yarn to be maintained at peak levels. It is believed this feeling of these spinners has been made known in Washington so that some decision on the question, one way or the other, is probable. These and all cotton spinners have been confronted with serious difficulties in operation which tend to increase their costs over the level apparent at the time the ceiling went into effect.

Spinners claim in this connection that due to the competition for workers from the war industries it is impossible for them to keep enough of their employes to operate three shifts a day, seven days a week and one large combed group within the last couple of weeks was forced by this trend to eliminate their Sunday work. Others have experienced somewhat similar conditions and report that their production has suffered accordingly. If they wish to keep their force intact it is necessary for them to grant wage increases and this has recently been done throughout the South. Spinners have also been confronted with other increases such as the premiums they must pay for long-staple cotton that is required in the manufacture of Army cotton uniform cloth and other military items.

### Rayon

A 6 per cent increase in domestic deliveries of rayon yarn to American manufacturers was reported for the first nine months of this year. The total was 461,300,000 pounds, which represented a new record for the American rayon industry comparing with deliveries of 435,000,000 pounds reported for the corresponding 1941 months. Deliveries of rayon filament yarn to domestic consumers totaled 347,700,000 pounds for the nine months which was an increase of four per cent compared with 332,900,000 pounds shipped in the corresponding 1941 period. For September alone rayon yarn deliveries amounted to 38,300,000 pounds compared with 38,100,000 pounds shipped in August and with 37,000,000 pounds shipped in September 1941. Stocks of rayon filament yarn held by producers amounted to 7,800,000 pounds at the end of September compared with 7,400,000 pounds at the end of August.

Civilian users of rayon yarns including the hosiery industry are finding the delivery situation becoming tighter because of the growing list of military items that are manufactured from rayon yarn and also because of the allocation of a percentage for export to Latin-American countries. In addition the trade is awaiting with interest details of a new conversion program planned to enable rayon manufacturers to turn out 50,000,000 pounds more high tenacity yarn per year needed for the war program of which a considerable portion would be used in making tires for military vehicles. If this conversion comes it is certain that the civilian trades such as hosiery would have to get along with a much smaller poundage of high tenacity yarns which have been finding their way into the making of hosiery. This might mean that in 1943 manufacturers of hosiery would be operating mainly on rayon stockings of a coarser nature than in recent months.

### Worsted Yarns

Although there has been a larger demand for worsted knitting yarns for military purposes this has not been sufficient to keep such spinners busy. This situation is reflected in shipments of sales worsted yarn during the first 9 months of this year when there was a decline of about 10 per cent in both weaving and knitting compared with the same period a year previous. This was brought about by a decline in shipments of knitting yarns while at the same time shipments of weaving expanded due to their use in Army and Navy uniform cloths. In knitting yarns shipments this year were 22,308,000 pounds compared with 28,392,000 pounds in the same months of last year. French system knitting has been the hardest hit by the war as this branch of the sales yarn business registered a drop from 7,176,000 pounds shipped last year in the first nine months compared with only 4,719,000 pounds in this period in 1942.

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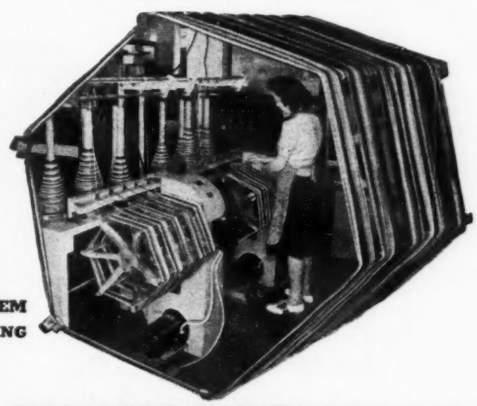

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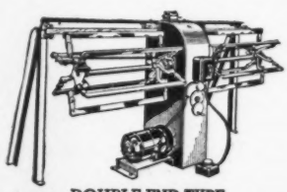

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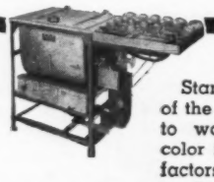

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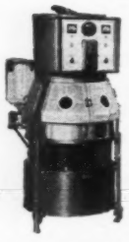

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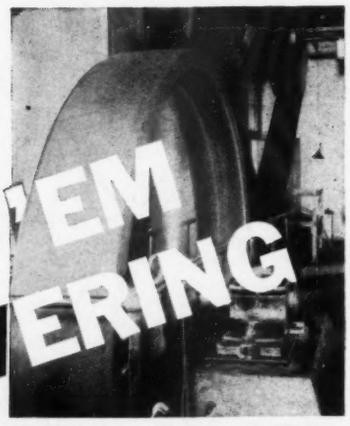

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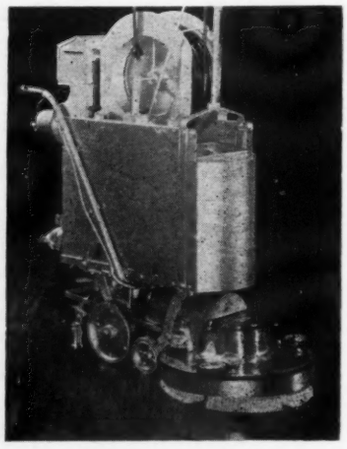

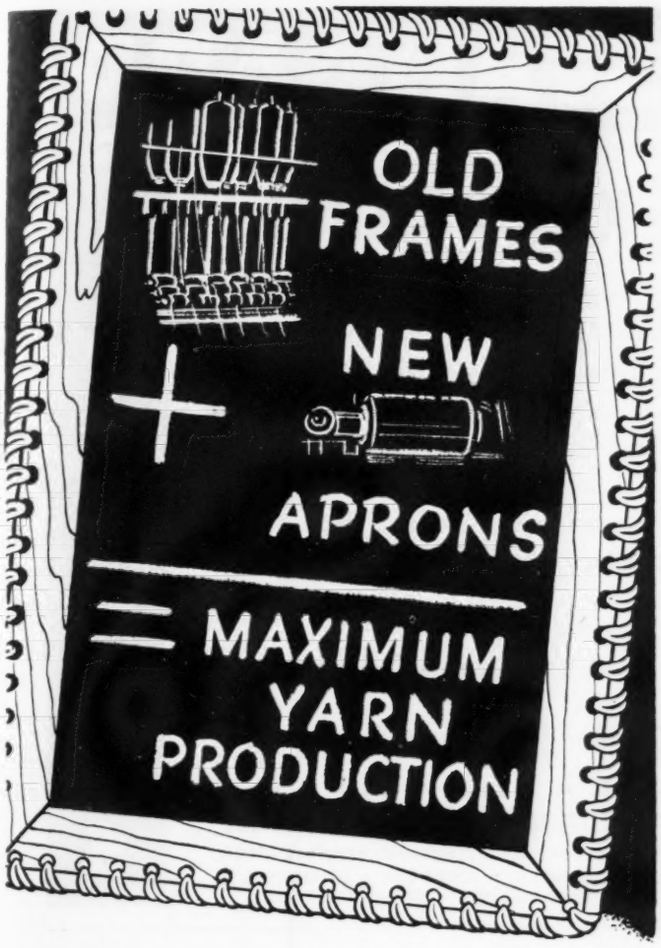


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Many processors and finishers of textiles working on government orders are depending on Onyx products and Onyx chemists and technicians to meet specification and production demands. Rapidly changing conditions in all of the raw material fields make very necessary the closest cooperation between Onyx technicians and the textile plants to keep production going. Mills and finishing plants are urged to consult with us on their processing and finishing problems. Onyx research and production facilities are at your service. We are helping others, perhaps we can help you. Your inquiries are solicited.

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For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

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. . . and there is often more than one style of traveler that will give completely satisfactory production on the yarns you are spinning or twisting. If the traveler you've been using is now hard to get, ask a Victor representative what good substitute is available. Write, wire, or telephone.

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*MANUFACTURERS OF*
**TEXTILE MACHINERY PARTS**

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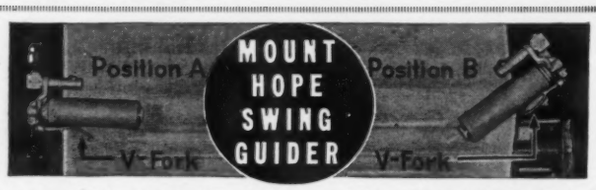


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**THE PRINCIPLE.** When the selvage works toward the apex of the V fork (see position A), the increased leverage swings the nip rolls toward the horizontal, thus releasing the pull on the selvage. When the selvage works away from the apex of the V fork (see position B), the decreased leverage permits the nip rolls to swing back to a more acute angle, thus increasing the pull on the selvage.

**ADVANTAGES.** Low maintenance; waterproof, rustproof, purely mechanical; no electric switches or coils to burn out or short circuit; no air valves to clog; only 2 moving parts; reversible rubber roll. Maximum speed. Gentle, positive, dependable action.

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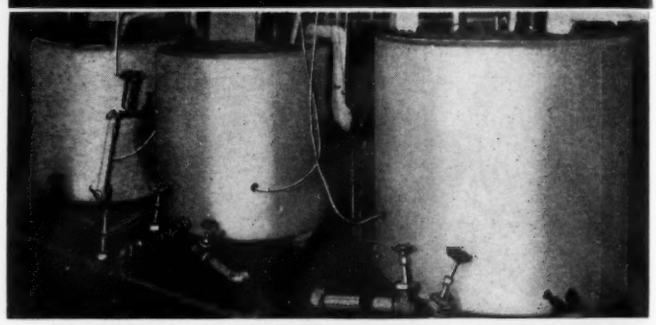

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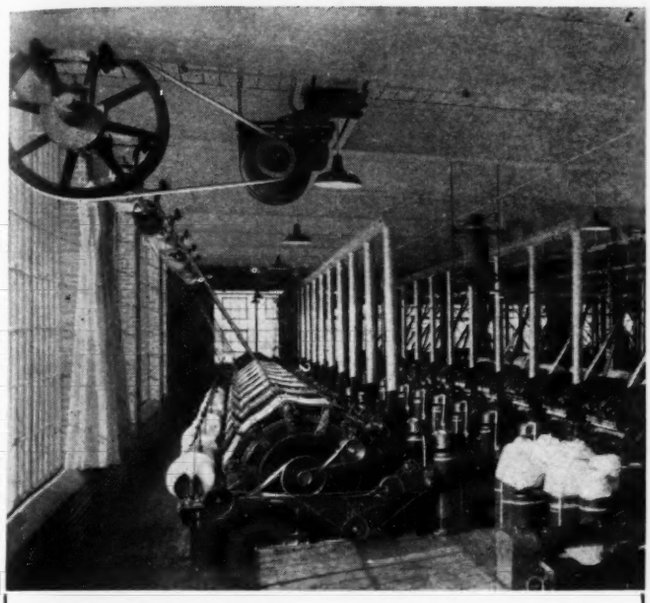

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Equip machines with TANNATE belts . . . keep production moving at maximum speed and with minimum interruption for repairs or for maintenance!

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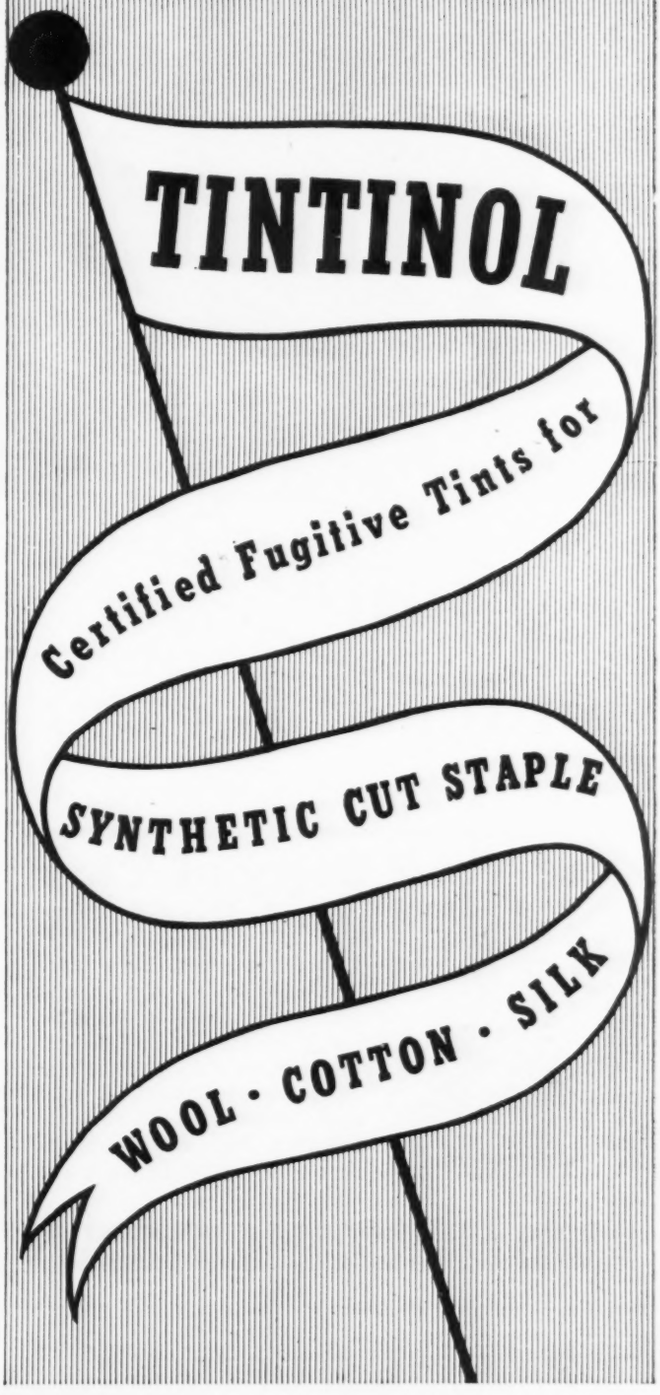


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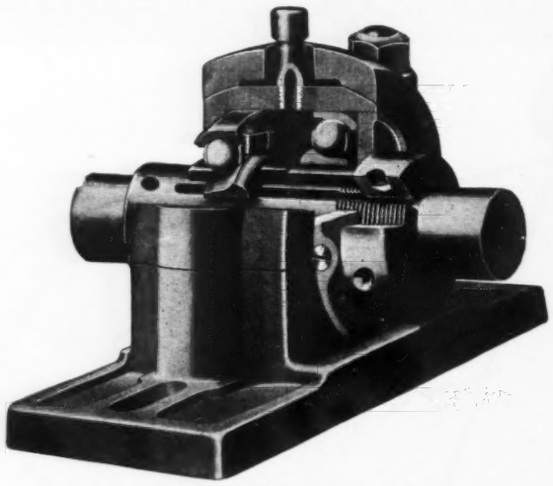

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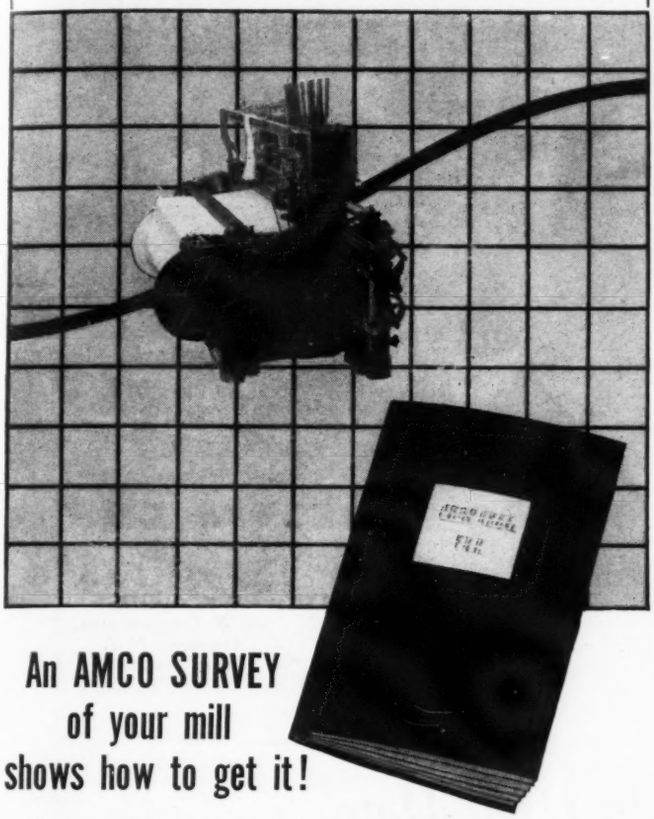
## from Old or New Machines!



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Unless you have actual data on humidity conditions in your mill, you may be missing an easy way to step-up output from every machine. For, *correct* humidity is one of the surest aids to increased production throughout your entire mill.

Why not find out? Let Amco engineers survey your mill without obligation. They'll submit a complete report including detailed plans for an Amco System that will remedy any incorrect condition . . . maintain most-productive humidity every minute at every machine!

**Get This "Ace-In-The-Hole"**

If lack of priorities eliminates the possibility of immediate installation, now's the time to provide an "ace-in-the-hole" for post-war competition. Let us survey your mill *right now!* Then, you will be in line for *preferred delivery* of Amco Equipment when peace comes.

**WRITE TODAY!** American Moistening Company, Providence, Rhode Island. . . . Atlanta . . . Boston . . . Charlotte.

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"The Leather with the Hair on"

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REG. U. S. PAT. OFF.

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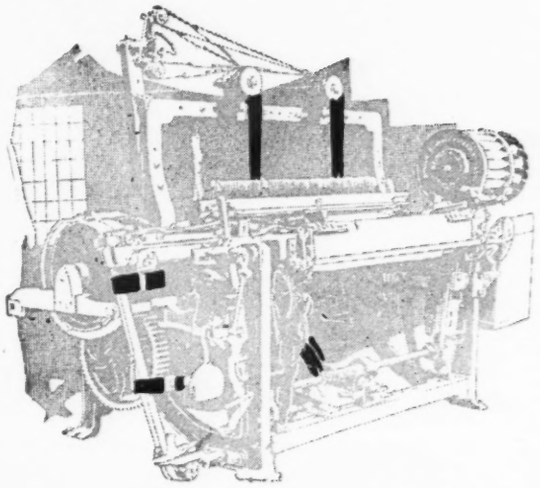

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Taken individually, Textile Leathers are comparatively inexpensive items. However, when the costs of all the leathers used during the past several years are added up, and losses of time due to stoppages for replacements, cost of broken picker sticks caused by poor lugs, etc., are figured in, the total is large.

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They are only slightly higher priced than ordinary leathers, yet they consistently wear from 3 to 5 times longer. Send us a trial order today and prove them on your own looms.

**THERE'S REAL ECONOMY IN STANDARDIZING ON BOND TEXTILE LEATHERS!**

**Bondaron, Bondural and Bondex Leather Products—**

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| Check Straps | Flat Belting | Oak Tan Slabs |
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| Spindle Straps | Worsted Aprons | Filleting Leather |
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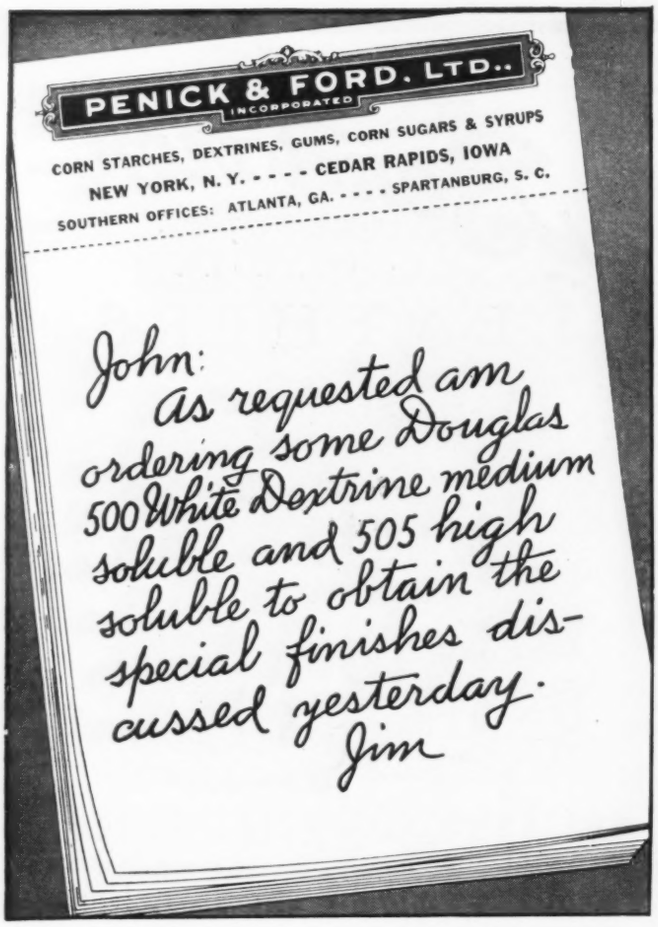
*Manufacturers of Textile Leathers for Nearly Half a Century*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SANFORIZING BLANKETS SLASHER JACKETS
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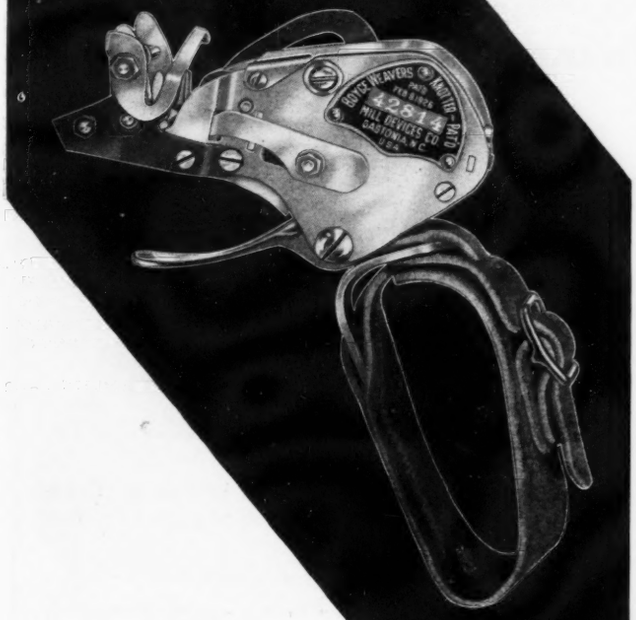
# Speed UP




## BOYCE WEAVER'S KNOTTER

*Speed-up* is the watchword of industry today. It goes for textiles as well as airplanes, guns, tanks, ships.

Boyce Weaver's Knotter is an instrument of faster, better work in textile manufacturing.

Keep your Boyce Knotters in perfect condition. Use our highly organized repair and new parts system of maintenance. . . Only Mill Devices Company can guarantee you the complete service for which the Boyce Knotter is famous.

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# MORE SPEED?

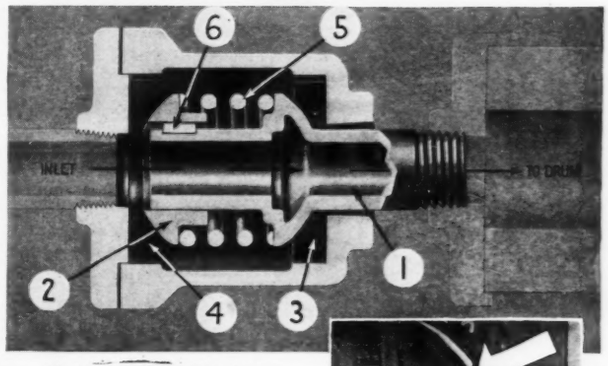
## Look to your STUFFING BOXES

IF you are looking for more production from your dry cans, slashers, or sanforizers, don't overlook the Johnson Rotary Pressure Joint. Your old stuffing boxes may be as good as they ever were, but compared to the Johnson Joint they waste valuable time, slow up production, and demand a lot of unnecessary care and attention.

The packless, self-oiling, self-adjusting, self-aligning design of the Johnson Joint is shown below. Because it puts an end to all stuffing box troubles it eliminates many causes of machinery shutdown saves valuable production time. More than that, it introduces a simpler way to provide for syphon drainage of cans and slashers, which reduces heating-up time, and permits higher, more uniform can temperatures.

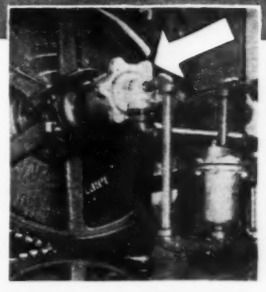
Add to these important increases in production efficiency the fact that the Johnson Joint saves enough in maintenance alone to pay its own way, and you will see why so many mills have been quick to adopt it.

*Write for new catalog*




**Note the Trouble-free, PACKLESS CONSTRUCTION**

Nipple (1) is fastened to roll or drum. Collar (2) is keyed (6) to nipple. Carbon graphite seal ring (3) and bearing ring (4), which eliminate oiling and packing. Spring (5) is for initial seating only; in operation joint is pressure sealed—self-adjusting. Ball and socket joints at nipple and rings absorb angular misalignment; space between nipple and housing provides for lateral misalignment.



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**For Dry, Clean, Oil-Free Compressed Air**
—use this simple, long lasting Johnson-Gast Separator. Employs the two best principles of separation, expansion and change of direction—removes more than 99% of all foreign matter from compressed air. Also available for service on steam lines. Team mate is the Johnson-Gast Aftercooler, which circulates cooling water around compressed air lines to condense all vaporized moisture—so separator can remove it.

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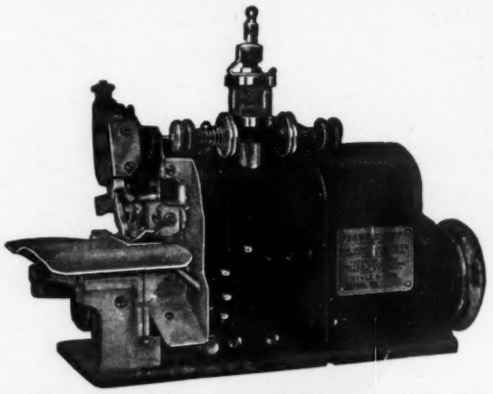
**MERROW CLASS A MACHINES**



Also Plain Crochet and Shell Stitch Models for Ornamental Edge Finishing and Class 60 Machines for Butt Seaming.

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*Write for details and let us demonstrate these machines on your own fabrics.*

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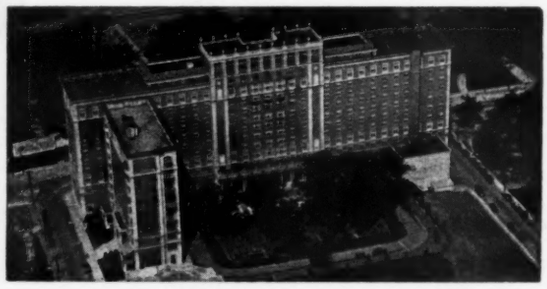

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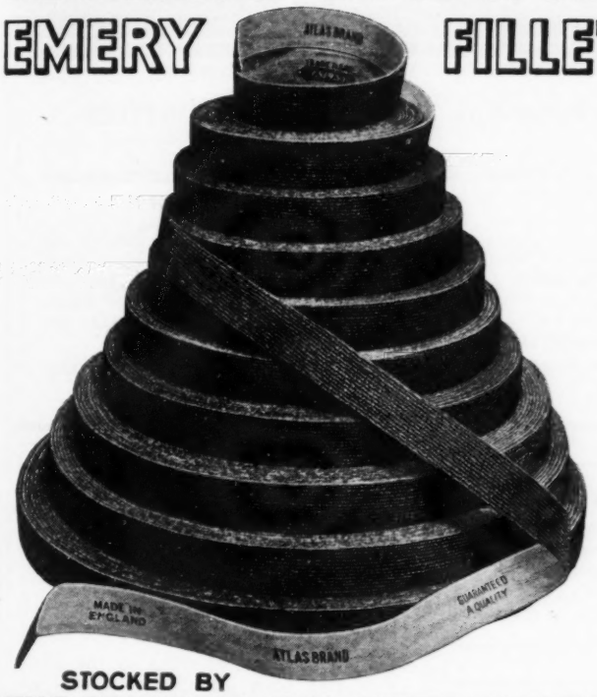


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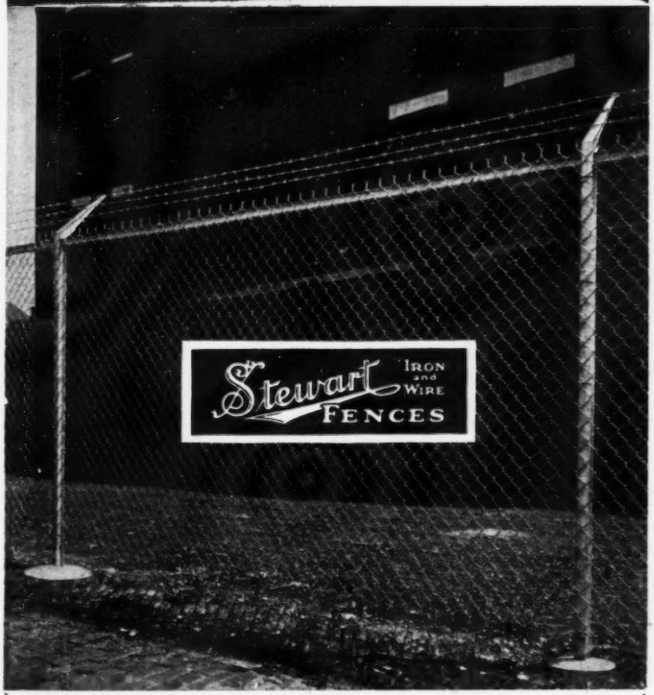


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## POSITION WANTED

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A practical card room second-hand in modern up-to-date mill, located in South Carolina. Good chance for promotion for ambitious man. Address Box 605, c/o COTTON, 1020 Grant Bldg., Atlanta, Ga.

## WANTED:

Good Brownell and Ring Twister Overhauler and Fixer. Draft Exempt. Age no limit. Pay to start 70 cents per hour. Address Granite Falls Mfg. Company, Granite Falls, North Carolina.

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## Your Advertisement on This Page

**will produce results at small cost. Do you desire a position? Do you desire a good man to fill a vacancy in your mill? Do you desire your business or professional card placed before the textile industries?**

**Why not try an advertisement on this page of COTTON? Its 12,300 copies per month reach the textile executives, superintendents and heads of departments throughout the industry.**

**Send in your advertisement today.**

**COTTON**
**GRANT BLDG. ATLANTA, GA.**

## *"Praise the Lord and pass the ammunition*

**—I just got another one of the —— — ——'s"**

That was the now-historic utterance of the chaplain at Pearl Harbor as he succeeded in blasting a Jap plane from the skies. Needless to say, he had done his job and done it well up to this point, but he needed more ammunition to keep his gun spouting shells at the sneaks.

The textile industry too, has done and is doing an excellent job in supplying necessary textiles for all branches of America's armed forces. But to continue this ceaseless production drive means that machinery must be kept in prime condition. Under this steady grind, certain parts break or become worn and inefficient, and must be replaced.

Accurately fitting, durable replacement parts keep textile machines tuned to the high pitch of today's output demands. **Henderson is glad to be working hand in hand with the textile industry by supplying repair parts for many of America's textile machines.** We at Henderson welcome the opportunity to work with you, too.

Write for prices, catalog or information concerning any repairs or conversion problems you might have.

Henderson Repair Parts
FOR TEXTILE MACHINERY
HENDERSON FOUNDRY & MACHINE CO., HAMPTON, GA.

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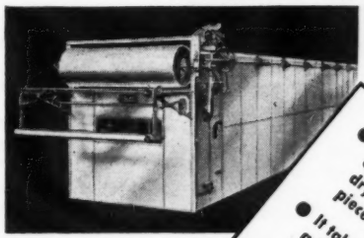

- This is a completely new type of automatic loop or festoon dryer for drying dyed or finished piece goods without tension.
- It takes goods as it comes out of a finishing quetch, or in the case of dyed goods, from a truck.
- The material is carried through the dryer while heated air, circulated at high velocity by fans of special Proctor design, is directed down into each loop.
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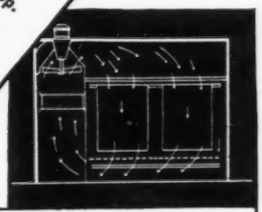
- The New Proctor Loop Dryer assures perfectly uniform results and offers unheard-of capacity in a very compact unit.



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*For your de-sizing problems— our technical men are at your service . . . Write or 'phone.*

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Dary's job is to keep spinning production rolling in high by supplying high speed Travelers . . . superior Travelers made by skilled workmen, using Dary's famous 45 year old process that means unequalled Ring Travelers for today's "high-pressure" manufacturing!

*See A Dary Representative Today!*

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**DARY RING TRAVELER CO.**
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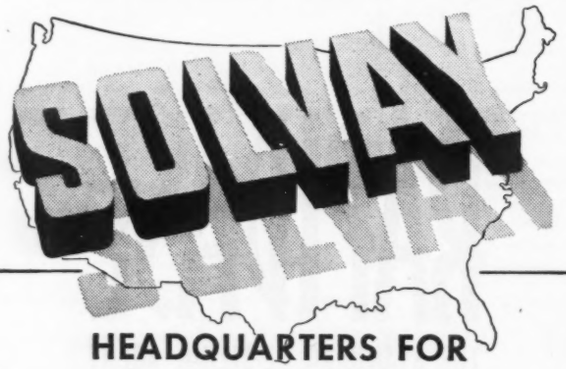


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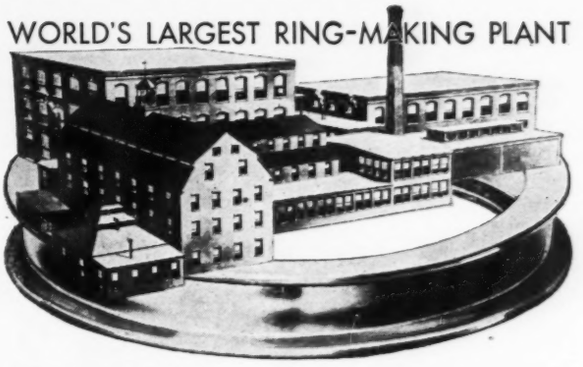
WORLD'S LARGEST RING-MAKING PLANT



On a foundation of *Quality*

The grandfathers of today's mill men found rings sold under the new "DIAMOND FINISH" trademark to be a quality product. They learned through the years that they could depend on rings of this name to perform with exceptional satisfaction. Today we are the world's largest ring making plant, and for just one reason: the Quality of our rings yields extra values in easy starting and long life.

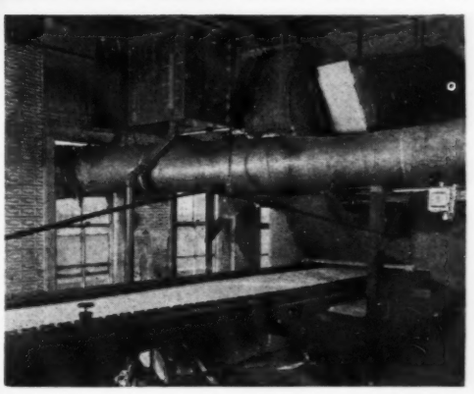
*We make all types of Holders*

**WHITINSVILLE (MASS.)**

**SPINNING** DIAMOND FINISH **RING CO.**

*Makers of Spinning and Twister Rings since 1873*

INFRA RED-RAY SPEED DRYING



Investigate the modern Red-Ray method of speed drying —TODAY.

2 to 5 TIMES FASTER

**RED-RAY MANUFACTURING CO.**

*Manufacturers of Infra-Red Ray Combustion Equipment*

455 WEST 45th STREET NEW YORK, N. Y.

# a 14 POINT Program

## That is acceptable to any Mill man!

Diplomats may argue about international political programs, but A. P. T. Yarn Carriers offer an industrial program which should be acceptable to any spinner or weaver who wants to save money and improve quality. Here it is:—

**1. Perfect Balance.** "Built around the hole", A. P. T. Carriers are always concentric with the spindle and therefore reduce vibration with resultant wear.

**2. Resist Distortion.** Impregnated for water repellency they resist distortion from changes in humidity and temperature, even normal steaming.

**3. No Splinters.** They always have a smooth hard surface which does not catch the yarn.

**4. Free But Controlled Delivery.** This is a natural result of a smooth surface, deep, well rounded corrugations and freedom from distortion.

**5. Seldom Chip or Split,** due to their "built up" construction,—layer on layer of tough paper.

**6. Perfect Spindle Cling** (due to resiliency), which eliminates slippage and reduces spindle wear.

**7. Resiliency.** Even if bent by abusive handling, these carriers will usually straighten out on the spindle.

**8. Light Weight,** which in some cases saves power.

**9. Great Strength** in view of their light weight. They do not have to be handled "with kid gloves".

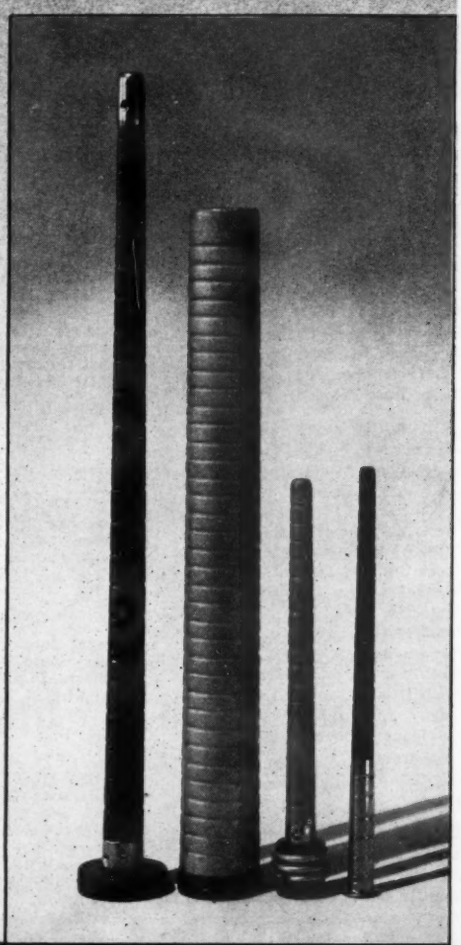
**10. Long Life,** resulting from their strength and resistance to distortion, splintering, etc.

**11. No Static,** which is a great advantage in some instances.

**12. Larger Capacity** in some cases due to comparatively thin wall and small diameters (if desired).

**13. Yarn Protection** due to freedom from splinters or rough spots.

**14. Ultimate Low Cost** due to operation economies, long life, etc.



***Investigate their possibilities for your purposes.***

**A·P·T**
TUBES · QUILLS AND BOBBINS
*They're Built Around the Hole*

**AMERICAN PAPER TUBE COMPANY**

ESTABLISHED 1898 . . . WOONSOCKET, RHODE ISLAND

SALES REPRESENTATIVES: M. Bradford Hodges, 161 Spring St., N. W., Atlanta, Ga.; W. J. Westaway Co., Ltd., Hamilton, Ont., Canada.

# These 2 Words MAKE MOTOR-DRIVE More Than POWER!

**Motor-drive provides within itself a means of:**

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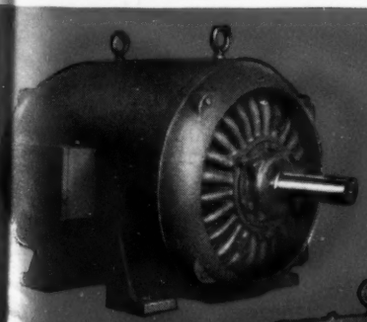
|---|---|
| Speed Control | Reversing |
| Braking | Remote Control |
| Tandem Operation | Controlled Acceleration |
| Tension Control | Safety |

**Slow Speeds for inching, threading, inspection**

**Applying them to boost production and improve quality is APPLICATION ENGINEERING. That's our business.**



Enclosed, Fan-cooled A-c. Reliance Motor.

Crane-type Enclosed D-c. Reliance Motor.

● PRODUCTION jobs, not merely power jobs, are awaiting these RELIANCE MOTORS. They will do *many things* which will aid in performing some part of a production process faster, better, or more safely. Users of these motors will have more for their money because they started their production plans with the question, *"What can we make the motor do besides supply power?"* Get the complete answer to this question when your plans are in their early stages. Invite a Reliance man to sit in . . . He may not have all the answers, but he will have enough of them to be a big help in finding the right one.

**RELIANCE ELECTRIC & ENGINEERING COMPANY**

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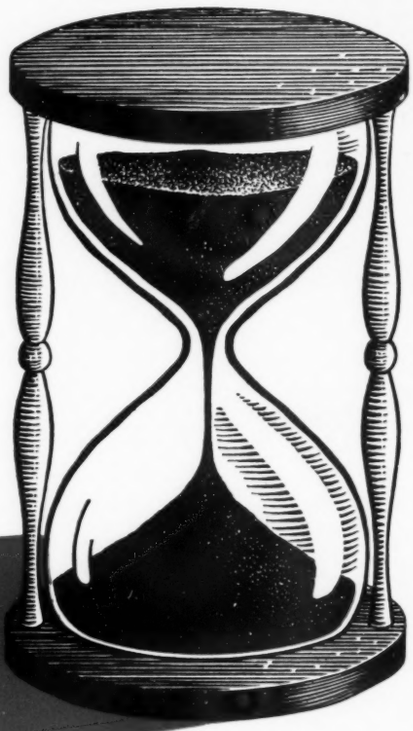
HOUSTON, TEX. • LOS ANGELES • MINNEAPOLIS • NEW YORK • PHILADELPHIA • PITTSBURGH
PORTLAND, ORE. • ST. LOUIS • SAN FRANCISCO • SYRACUSE, N.Y. • and other Principal Cities

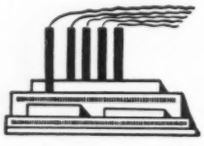
**RELIANCE A-C D-C MOTORS**

# TIME WON'T WAIT-



SPEED UP YOUR GOVERNMENT ORDERS WITH

# VATROLITE*



Leading textile mills have been using Vatrolite on Army and Navy cloth since 1939. Today, over 75% of the production of this time-tested reducing agent is going into government work.

Here's why. Vatrolite has a uniform, *granular* structure. It keeps "dusting" down to a minimum. That means less wheezing and coughing on the job . . . better, more efficient working conditions . . . fewer man hours lost in filling those vital Army and Navy contracts!

Vatrolite measures up to rigid government specifications to the letter. Always full-strength and highly stable, it assures you of *exacting results* in vat dyeing . . . longer, bigger runs. (Another *plus* when it comes to speed!) What's more, Vatrolite is an ideal "stripping" agent for cotton and rayon . . . strips colors from defective materials or reworked goods quickly, efficiently. Write today for details.

*Sodium Hydrosulphite Concentrated

## ROYCE CHEMICAL COMPANY

CARLTON HILL, NEW JERSEY

**MANUFACTURERS OF SULPHONATED OILS INCLUDING VELV-O-RAY*, CASTROLITE*, AND HYDROSULPHITES INCLUDING PAROLITE*, VATROLITE*, DISCOLITE***
*Reg. U. S. Pat. Off.